



**ONSITE SEPTIC SYSTEM INSPECTOR TRAINING
PILOT PROGRAM
FEASIBILITY STUDY REPORT**



South Carolina Department of Health and Environmental Control
Office of Ocean and Coastal Resource Management



Clemson University Extension Service

July 2002

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EXECUTIVE SUMMARY

A pilot onsite septic system inspector training program has been undertaken, in part, for the purpose of meeting conditions placed on South Carolina's conditionally approved Coastal Nonpoint Pollution Control Program (CNPCP). Current state regulations do not require post-operational inspections once a newly installed system has passed final installation inspection. The federally mandated CNPCP allows states to develop strong voluntary programs (in lieu of passing new regulations) aimed at reducing specific sources of nonpoint source pollution. One of the main goals of this inspector training program is to provide a pool of qualified inspectors, so that local governments in the coastal zone of South Carolina will be more inclined to develop septic system inspection and maintenance ordinances, thus reducing water quality impacts from septic systems.

The first phase of the pilot inspector training program consisted of a feasibility study. The study was done to determine the need for developing a training program and to ascertain the logistical requirements and costs associated with its implementation. As part of the study, a survey was conducted in the eight coastal counties to determine attitudes, interests, and opinions of numerous stakeholder groups. These groups included individuals affiliated with local governments, housing inspections, manufactured housing parks, mortgage lending, real estate, septic installation and pumping, and utility companies. The 185 responses out of 590 surveys mailed resulted in a 31% response rate with a sampling error of $\pm 10\%$. The major findings of the survey include:

- Two-thirds of respondents see the need for a standardized training program.
- Almost 80 percent indicated that inspectors should be required to pass specialized training and testing.
- Over 60 percent would consider requiring inspections if trained inspectors were available.
- If inspections were to be required, slightly more said that it should be a state requirement rather than a local government requirement.
- Almost two-thirds believed that mortgage lenders should require septic system inspections prior to loaning money for a property sale.
- Over 80 percent said that a positive inspection report (i.e., properly functioning at time of inspection) should not be taken as a guarantee of proper future function of that system.
- Almost two-thirds requested notification of upcoming training classes.
- Homeowners and buyers of homes on septic systems need to be better informed about the location of and proper operation and maintenance of their system.

Three two-day training sessions are proposed to be held in Winter 2002, in Charleston, Horry, and Beaufort Counties. Day one will cover the basics of septic systems in a classroom setting. Day two will involve a visit to a newly installed, uncovered septic system, two actual hands-on inspections of operating systems, and a written exam. The Department of Health and Environmental Control Office of Ocean and Coastal Resource Management, the Onsite Wastewater Management Branch, and the Clemson University Extension Service are developing the training program cooperatively.

INTRODUCTION

Purpose of Pilot Program: The purpose of a pilot onsite septic system inspector training program is to obtain federal approval of South Carolina's Coastal Nonpoint Pollution Control Program (CNPCP). Section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990 requires an approved coastal nonpoint source program. South Carolina received conditional approval of its CNPCP February 23, 1998, by the National Oceanic and Atmospheric Administration (NOAA) and the US Environmental Protection Agency (EPA), the agencies that jointly administer the §6217 program. If South Carolina fails to receive final full approval of the CNPCP, this will result in substantially reduced funding of South Carolina's statewide nonpoint source program (§ 319), the §6217 program, and other NOAA-funded programs administered by Department of Health and Environmental Control Office of Ocean and Coastal Resource Management (DHEC-OCRM).

One of the conditions listed in the 1998 conditional approval was to develop a program for the inspection of operating onsite disposal septic systems (OSDS). Newly installed septic systems are routinely inspected by DHEC prior to placement of final cover and system operation. However, state law routinely requires no other inspections once a system is in use. NOAA and EPA would prefer to see a state law that mandates inspection of systems at regular intervals (e.g., every 3-5 years). However, the agencies have indicated they will accept either a program that inspects systems at the time of sale of the property/home, or a program that focuses inspection on identified problem areas (e.g., lots with older OSDS, known high failure rates, or known OSDS-induced water quality problems). Such a program should be consistent with available resources, and show there is sufficient commitment on the part of the state to implement such a program (e.g., commitment to provide staff/resources to all problem areas in the 6217 management area over time).

The successful completion of this pilot inspector training program will, in part, result in removal of this approval condition. The ultimate goal of this pilot program is to facilitate the voluntary adoption of onsite septic system management programs at the local government level. The geographic boundaries of the CNPCP are the eight coastal counties (also called the coastal zone) of South Carolina. Thus, the efforts of this pilot program are focused on the coastal zone.

Purpose of Feasibility Study: Prior to developing and offering a training program, it was necessary to determine the desire and/or need for such a program, and to ascertain the logistical requirements and costs associated with implementation. A Steering Committee was selected and convened to oversee the feasibility study, and to determine if the study warrants continuation of program development. The makeup of the committee was intended to represent the various stakeholders or interested parties on the matter of onsite system inspections. However, representatives of the septic system installer/pumper industry and the mortgage lending industry are not represented on the committee. They were included in the survey, which is discussed in the next section. See Appendix A for a list of committee members and the proposed training team.

Objectives of Septic System Survey: The objectives of conducting a survey as part of the overall feasibility study were as follows:

1. Determine the attitudes and awareness of issues surrounding septic system management.
2. Determine the level of septic system operation and maintenance that currently exists.
3. Determine the level of interest in developing an inspector training program.
4. Determine what institutional driving forces (e.g., realtors, mortgage lenders, house inspectors, local governments) exist for the development of a training program.
5. Determine at what level an inspection program should be implemented, e.g., private level only, public level, or some combination of both.

SURVEY METHODOLOGY

Format. A copy of the survey and cover letter is attached as Appendix B. The basic format of the survey was based on the principles and methodologies obtained from the book How to Conduct Your Own Survey (Salant and Dillman, 1994). In addition, Tom Fish, of the NOAA Coastal Services Center, assisted greatly in the development of the survey. A draft of the survey was presented to the Steering Committee at its February 8, 2001 meeting and changes were made based on comments and discussion. Subsequent drafts were e-mailed to committee members for additional comments. On April 26, 2001, the final draft survey was sent to the committee to be filled out as a focus group. Based on the committee responses, two questions were modified slightly. The phrase “within 5 years” was added to the end of question 12 to narrow the time period asked. Question 17 was slightly modified to clarify the intent of the question and, additionally, respondents who chose “yes” were given an open-ended question asking for how long the guarantee/warranty should be. Since these modifications were minor, the responses from the committee were included with all of the responses in the analysis of the survey.

The logic behind the final content and order of survey questions is as follows.

Questions 1-11 were grouped together because of the Likert response scale (e.g., strongly agree to strongly disagree) used and because they were written to get respondents thinking about the ‘big picture’ regarding septic systems. Questions 12-13 were written to gather information from the respondents based on their knowledge or experiences. Questions 14-18 were written to gather information and opinions that may help in the future development of septic system maintenance ordinances by local (or state) governments, or requirements by lending institutions. Questions 19-26 were written to help determine the need for a standardized program to train inspectors, to help determine what exemptions, if any, should be allowed from training, and to determine interest in attending training at the three locations offered. Question 27 was written to identify the professional classification of the respondents, and so some of the responses could be broken down by profession. Question 28 was designed to facilitate notification of professionals interested in attending training if offered.

Target groups and sample size: The survey was targeted at nine (9) different professional affiliations. An additional “other” category was included in the survey for those who considered themselves outside of the listed categories. Mailing lists were obtained from a variety of sources, and in most cases, attempts were made to select survey participants in a random and/or unbiased manner. This was not always possible because the survey was intended for those with knowledge or experience with regard to septic systems. For example, for municipalities with more than two staff members, those whose jobs would make them seem more likely to be knowledgeable about septic systems were chosen over those whose job appeared totally unrelated. The same applied for county governments. For smaller towns essentially without a paid staff, surveys were generally sent to the mayor and one council member.

In addition, under some professional affiliations, it was not possible or practical to have access to the entire population from which to draw a representative sample. For example, the South Carolina Association of REALTORS sent in a mailing list of 100 realtors as a sample of the 2000+ members of their coastal Boards. Another group that was hard to sample was the mortgage lenders. Mailing lists were obtained from the South Carolina Mortgage Brokers Association and the Independent Banks of South Carolina. These lists totaled only 65 members in the coastal zone, so all were included in the sample size. Therefore, the larger population of mortgage lenders, in particular those statewide and national companies, was not represented in the survey responses.

The mailing list for manufactured housing was obtained from the Manufactured Housing Institute of South Carolina, Inc. (MHISC). This list included all manufactured housing parks located in the coastal zone that are members of MHISC. The list for home inspectors in the eight coastal counties was obtained from the office of Steering Committee member Charles McAlister of the Labor Licensing and Regulation Board. The list of licensed septic installers and pumpers in the coastal counties was obtained from DHEC's onsite wastewater program office. The utility companies targeted were primarily the larger water and sewer authorities located in the coastal counties.

Table 1. Distribution of Surveys Mailed (sample size) in Initial Mailing

PROFESSIONAL AFFILIATION	APPROXIMATE POPULATION	SAMPLE SIZE
City government	50	100 (2 per city)
County government	8	24 (3 per county)
House inspections	200	100
Manufactured housing	39	39
Mortgage lending	65	65
Realtor / real estate	2000	100
Septic installation	198	108
Septic pumping	32	32
Utility company	8	8
Other	N/A	N/A

Survey mail out: The majority of the surveys were mailed out on May 29, 2001. A self addressed stamped envelope was included to increase the response rate. For surveys that were returned because they were undeliverable, they were subsequently re-mailed on June 5 to home inspectors or septic installers who were not part of the original sample. Because of this, an exact number of deliverable surveys mailed was not recorded, but it approximated 590 surveys (including Steering Committee members). Respondents were asked to return completed surveys by June 22, 2001. Respondents were not asked to include their identity unless they wanted notification of upcoming training classes.

SURVEY FINDINGS

Response rate and sampling error: Of the approximately 590 surveys delivered, 185 responses were received. This represents a 31% response rate, which is considered good, given that the survey was sent only one time and there was no incentive for responding (unless one considers notification of a training class an incentive!). According to the book, How to Conduct Your Own Survey, based on our sample size, we can say that we are 95 percent confident that our estimates will have a sampling error no more than ± 10 percent (it should actually be less than 10 percent but more than 5 percent).

The following graph (Fig. 1) shows the number of respondents in each of the professional affiliation categories (question 27 of survey). Two respondents did not answer this question. Figures shown represent the percent of those who responded to the question.

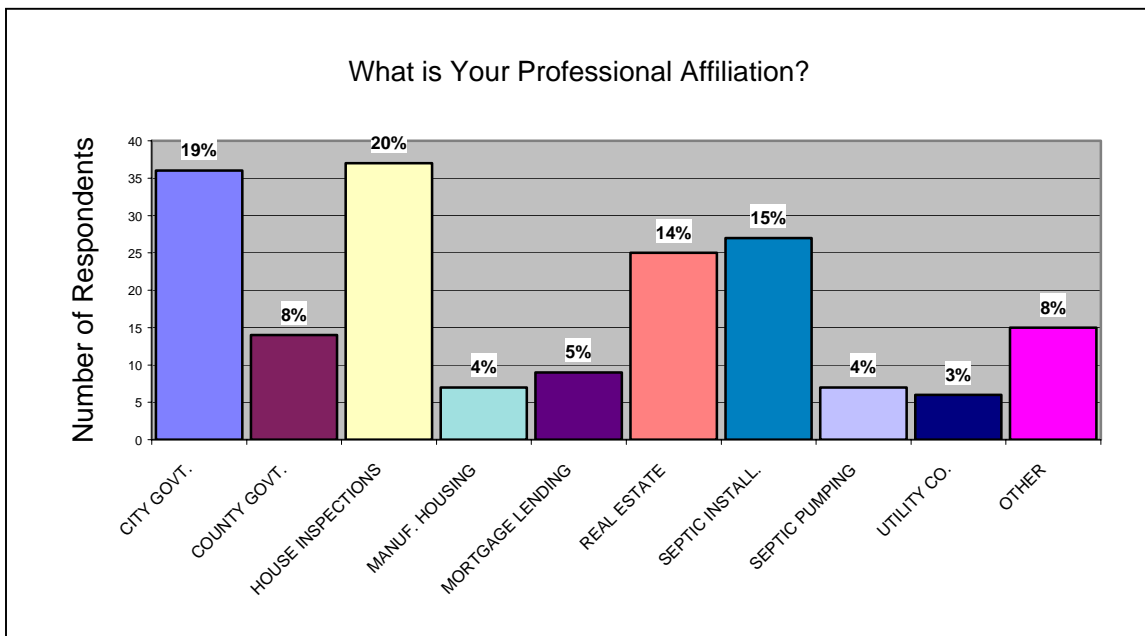


Figure 1. Number (and Percent) of Survey Respondents by Profession

Figure 1 shows that the largest group of respondents were represented by local governments (city and county combined) and the next two largest groups were represented by house inspectors and those in the septic industry (installers and pumpers), followed by the real estate industry. Among the 168 respondents who fit into the listed categories, 31 also included one or more "other" affiliations. Of the 15 that responded only in the "other" category, five said they were developers or contractors, two were with the federal government, two were with a university, one was a commercial banker, one was with a convenience store, one worked for DHEC, one was a Professional Engineer (P.E.), and two did not specify their professional affiliation.

Although response rate by professional affiliation (i.e., the percent of those receiving a survey who responded) could not be *accurately* determined due to the inexact number of

surveys mailed in some categories, approximations could be made (see Table 2). These show that the highest response rate was from utility companies (approx. 75%, or 6 out of 8, responded), followed by county government (58%), house inspectors (37%), city government (36%), real estate and septic installers (25% each), septic pumpers (22%), manufactured housing (18%) and finally, mortgage lending (14%). Again, these figures are inexact, however, they show approximate response rates relative to other categories. Table 2 also shows that for some categories, the percent that responded to the survey was close ($\pm 2\text{-}4\%$) to the percent that received the survey.

Table 2. Comparison of Survey Participation

PROFESSIONAL AFFILIATION	% RECEIVED SURVEY (APPROX.)	% RESPONDED TO SURVEY	% RESPONSE RATE (APPROX.)
City government	17	19	36
County government	4	8	58
House inspections	17	20	37
Manufactured housing	7	4	18
Mortgage lending	11	5	14
Realtor/ real estate	17	14	25
Septic installation	19	15	25
Septic pumping	6	4	22
Utility company	1	3	75
Other	N/A	8	N/A

Determining Need for a Standardized Inspector Training Program: One of the main objectives of the survey was to determine if there was a need for a standardized inspector training program in coastal South Carolina. Figure 2 shows the breakdown on this question (#25 of survey) by professional affiliation.

Figure 2 clearly shows that the majority of respondents in each profession indicated that a standardized inspector training program *was* needed. Only the mortgage lending category had equal responses across the board. Figure 3 shows the aggregated responses to question 25.

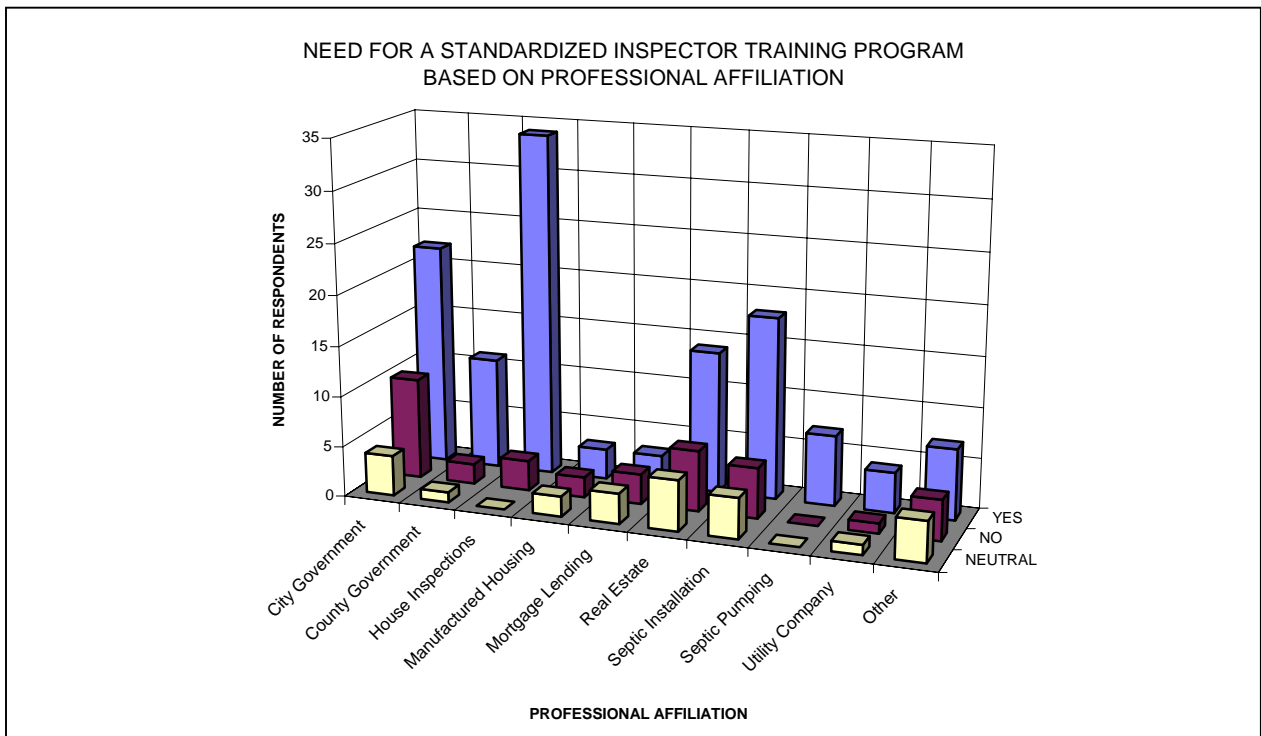


Figure 2. Need for Standardized Training Program by Professional Affiliation

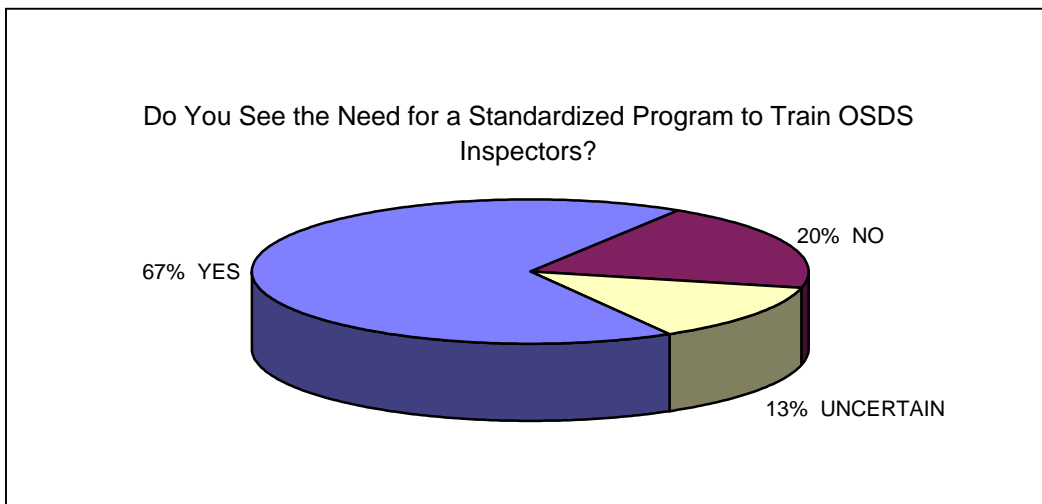


Figure 3. Need for a Standardized Training Program – Overall Response

Determining Training Requirements/Preferences: The following several figures relate to the level of training that may be desired or required from both a professional and a homeowner’s viewpoint. These questions were posed, in part, due to knowledge of a training exemption based on professional standing allowed by the state of Massachusetts (at one point, we had anticipated modeling this pilot program after the Massachusetts program).

Professional engineers, registered sanitarians, and certified health officers are exempted from training and testing in Massachusetts. For a more complete description of the Massachusetts program and other established inspection programs, see Appendix C.

Figure 4 shows the responses to question 19 in which respondents were asked whether specialized training and testing should be required of inspectors. The option of a full-blown exemption (from training *and* testing) was not offered at this point. Only 10% of respondents felt that testing alone would suffice.

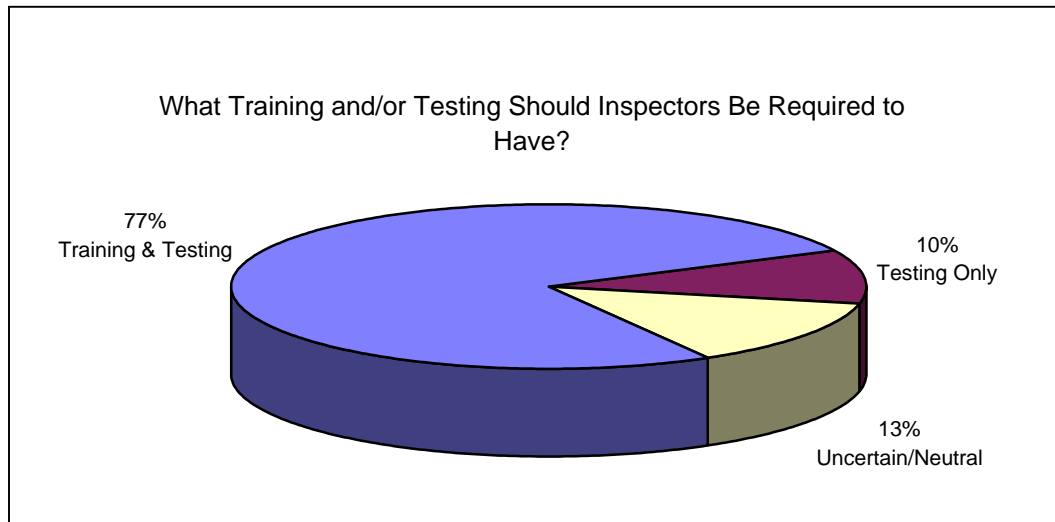


Figure 4. Require Training & Testing or Testing Only

As a follow up to question 19, question 20 asked which profession, if any, should be exempted from specialized training and testing. Several options were given and any combination of answers was allowed. Table 3 shows the positive responses only; in other words, only if a number was circled did it count as a yes response for that category. For example, out of 185 respondents, 25 thought a P.E. should be exempted, whereas 85 respondents said none should be exempted from training and 80 said none should be exempted from testing. The numbers can exceed 185 since more than one answer was possible.

Table 3. What Professions, If Any, Should be Exempted from Training and Testing?

P.E.	INSTALLER	PUMPER	HOME INSPECTOR	OTHER	NONE- TRAINING	NONE- TESTING	UNCERTAIN / NEUTRAL
25	45	23	15	7	85	80	17

The open-ended responses to the *other* category for respondents to fill in which other professions they felt should be exempted from specialized training and testing included the following:

- Biological wastewater plant operator
- Class A & B wastewater system operators
- DHEC

- All should be exempted
- Homebuilders
- Any unlicensed plumbing company
- Only people that are inspecting for buyers need to be schooled for standard things to look for.

Respondents were also asked what training prerequisites should be obtained if their professional or governmental organization were to require inspections of septic systems (question 22). The question was geared primarily toward those professions with the potential authority to *require* inspections (all others should have chosen the *does not apply to my profession* category). However, more respondents answered *yes* or *no* than potentially have the authority to require inspections. As shown in Figure 5, respondents were almost twice as likely to prefer trained inspectors over having no preference for either trained inspector or exempted professionals.

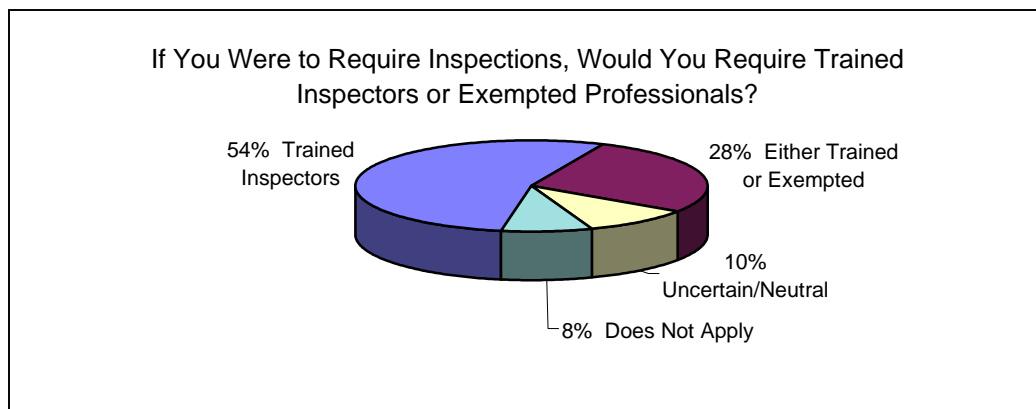


Figure 5. Require Trained Inspectors or Exempted Professionals

When asked what might influence a homeowner's decision to hire an inspector (question 21), more than half of the respondents said that the completion of training and testing was important to the homeowner (Fig. 6). The next largest influential factor was cost alone, and the fact that someone was an exempted professional seemed to matter the least. The responses to the *other* category were variable, and included some of the following:

- One fourth (10 out of 40) of the write-in responses said a combination of cost and training was important, with some qualifying that it depends on who is doing the hiring, e.g., buyer vs. seller.
- Others said years of experience and/or having a business license and insurance were important

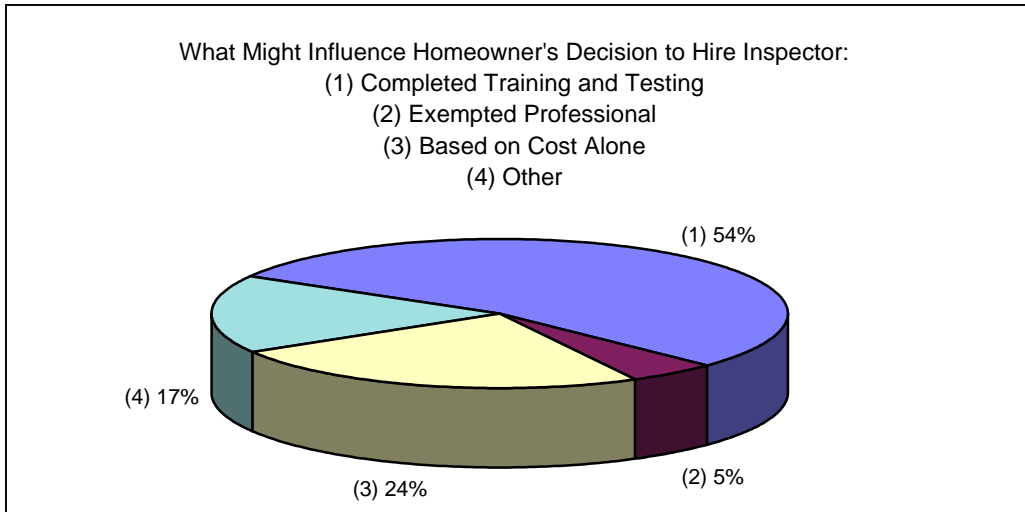


Figure 6. What Influences Homeowners In Hiring Inspector?

Attending Training Classes: At the end of the survey, respondents were asked if they wanted to receive notification of training classes (question 28) and if they or someone in their organization were willing to attend such a session (question 26). Figures 7 and 8 below illustrate the responses. Since several respondents selected more than one training location (or none at all), the sum total equals more than the number of responses received. In many cases, respondents said that they would not be willing to attend a training class, but they wanted to be notified if and when any training courses were offered.

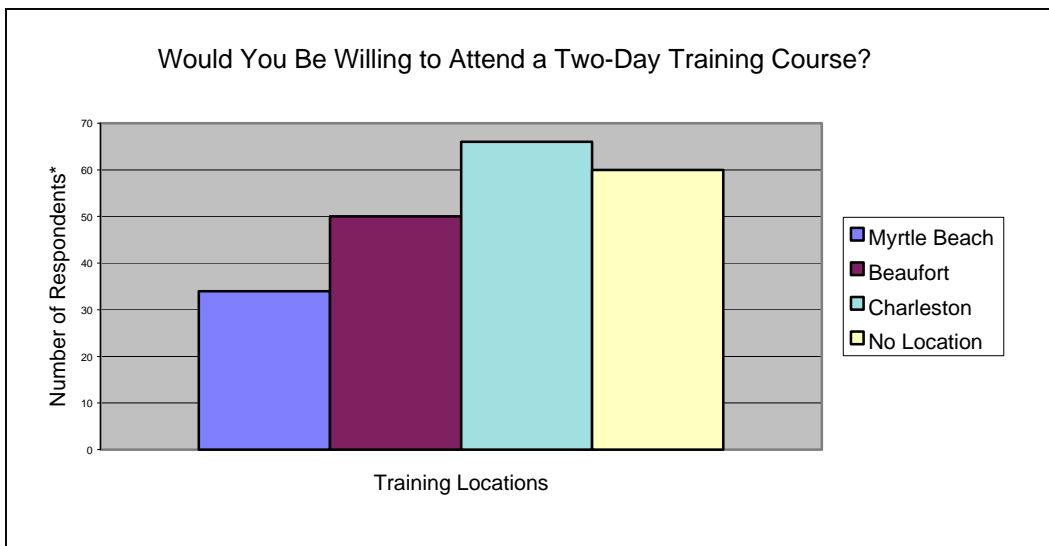


Figure 7. Willingness to Attend Training Course By Location



Figure 8. Desire Notification of Upcoming Training Courses

Requiring Inspections: When asked if their professional or governmental organization currently required the inspection of septic systems (question 24), there appeared to be some slight confusion. Although the survey instructions said to assume that all references to inspections refer to existing systems and not new installations, most qualifying responses to the *yes* category referred to inspecting new installations. Therefore, in Figure 9 corrections were made when it was obvious the respondent was referring to new installations currently inspected under DHEC regulations. In addition, as in question 22, the *does not apply to my profession* response appeared to be underutilized.

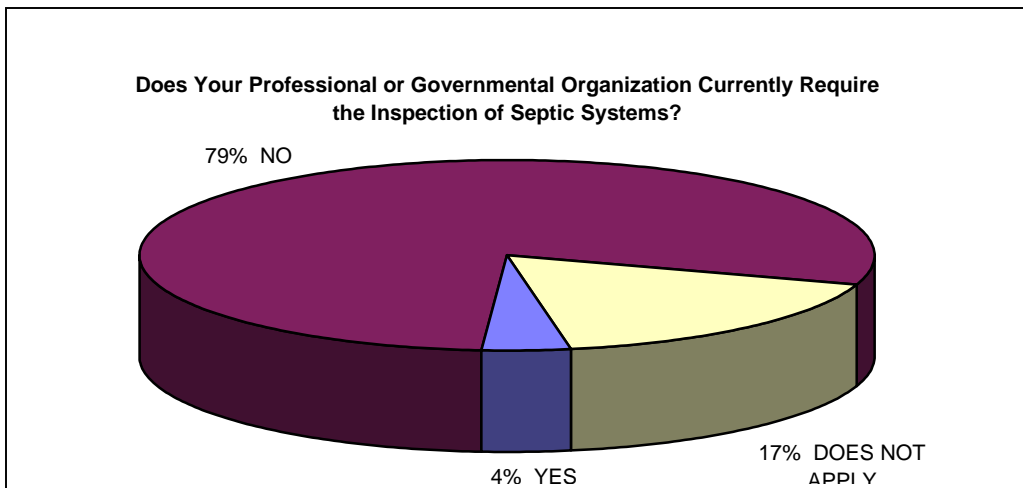


Figure 9. Currently Require Inspections of Existing Septic Systems

Of the 4 percent (corrected) who said they do require inspections, three respondents gave no qualifying response. The remaining four respondents who qualified their *yes* responses answered as follows:

Table 4. Comments on Current Requirement for Inspecting Operating Systems

PROFESSIONAL AFFILIATION	CURRENT INSPECTION REQUIREMENTS
City Government	for building additions (room, bath) require inspection of septic system & letter from install re capacity; also call DHEC
Mortgage Lending	for FHA loans
Installer	For some loan companies we check solids build up, grade on outlet, normal water level, solids over trap, or if drainfield is holding water or dispersing it.
Installer	They inspect the tank, drainfield

In direct relation to the question of whether a standardized training program was needed was the question of whether the respondents would consider requiring inspections if a pool of trained inspectors was available (question 23). Figure 10 shows overwhelmingly that 61% of respondents would consider requiring inspections. Here again, a smaller than expected number responded *does not apply to my profession*.

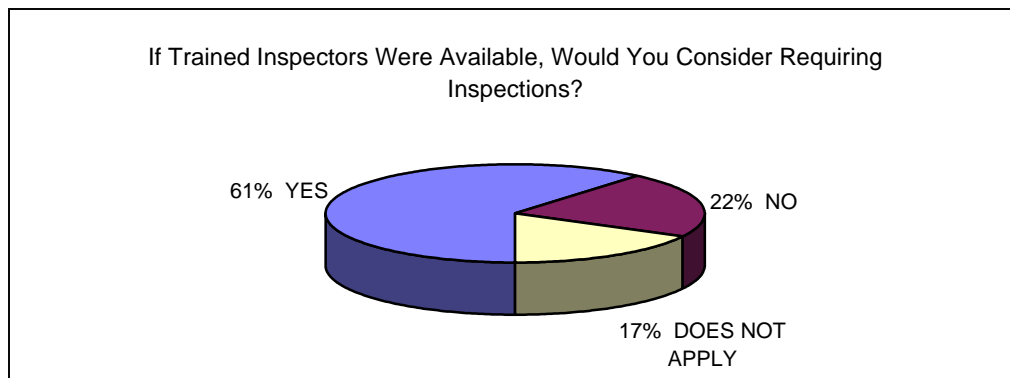


Figure 10. Consider Requiring Inspections Given Pool of Trained Inspectors

As shown in the above two figures, whereas 79% of respondents do not currently require inspections of operating systems, 61% would consider requiring inspections if a pool of trained inspectors was available.

When asked whether inspections should be mandated by state or local government, if at all, (question 15), respondents slightly preferred state (45%) over local government (37%) (see Fig. 11). Sixteen percent of respondents said that inspections should not be required. Although only one answer per respondent was expected, several (2%) selected both state and

local government or stated either one, therefore, a fourth category, *either*, was included in the analysis.

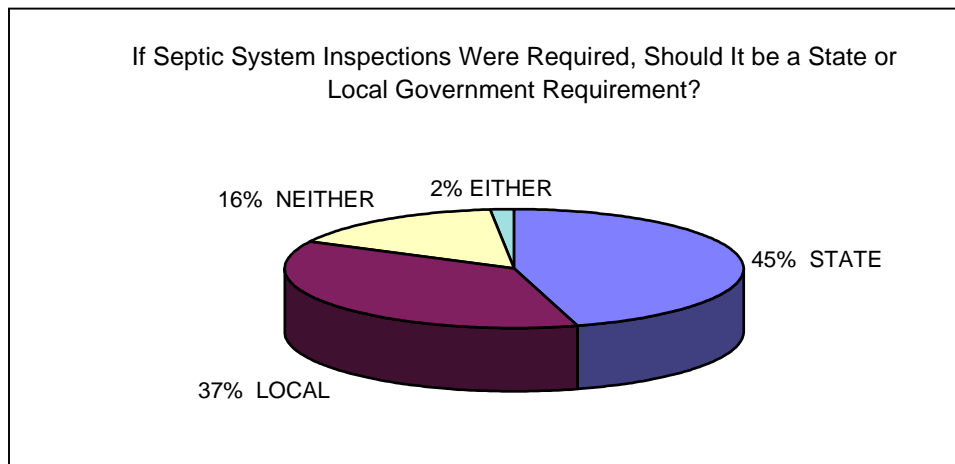


Figure 11. State or Local Government Inspection Requirement

Question 16 of the survey asked if mortgage lenders should require that septic systems be inspected prior to loaning money for a property sale. Sixty-four percent of all respondents said that, *yes*, mortgage companies should require inspections; 22% disagreed, and 14% were neutral or uncertain (Fig. 12).

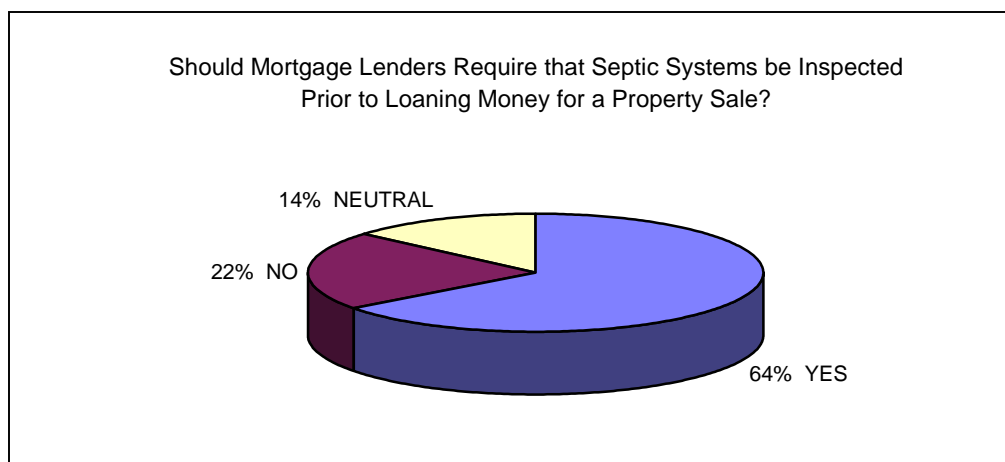


Figure 12. Should Mortgage Lenders Require Inspections?

Table 5 illustrates a breakdown of the responses by professional affiliation. Note that the mortgage lenders were the only group where the majority said *no* they should not require inspections before loaning money for property purchases. As stated in the section, *Survey Methodology – Target groups and sample size*, this group of mortgage lenders may not represent the larger, statewide and national companies that may be more inclined to (or already do) require inspections as part of their accepted routine for property transfers.

Table 5. Should Mortgage Lenders Require Inspections:
Number of Respondents (%)

PROFESSIONAL AFFILIATION	YES	NO	NEUTRAL
City government	20 (56%)	6 (17%)	10 (28%)
County government	10 (71%)	2 (14%)	2 (14%)
House inspections	28 (76%)	6 (16%)	3 (8%)
Manufactured housing	2 (29%)	2 (20%)	3 (43%)
Mortgage lending	2 (22%)	7 (78%)	0
Realtor / real estate	15 (60%)	7 (28%)	3 (12%)
Septic installation	22 (79%)	3 (11%)	3 (11%)
Septic pumping	6 (86%)	0	1 (14%)
Utility company	6 (86%)	1 (14%)	0
Other	10 (63%)	6 (38%)	0

Question 18 was designed to elicit a discussion on the potential for litigation should an entity chose to require inspections of septic systems. The actual comments and their groupings can be seen in Appendix D. Although the question was open-ended, the responses were grouped into one of four categories:

1. some liability or other legal ramifications – 36 responses;
2. no potential legal ramifications – 52 responses;
3. other comments, either related or somewhat related to the issue – 25 responses;
4. did not know of any legal ramifications – 15 responses.

Respondents were also asked if a warranty or guarantee is implied by an inspection report that states the system is functioning properly at the time of the inspection (question 17). For those who responded *yes*, they were asked to specify how long the proper future function of the system should be warranted or guaranteed. Figure 13 shows that 82% of all respondents said that no warranty is implied; that a positive inspection report only ensures proper functioning at the time of inspection. For the 18% who said a warranty of proper future function is implied, the open-ended responses for how long were grouped into four categories. The percentages in the outside circle of Figure 13 are a breakdown of the 18% who said *yes* in the inside circle. Thus, 52%, or 17, who responded *yes*, said that a warranty should be for up to 1 year after the inspection (answers included 1 month, 2 months, 6 months, and 1 year). Thirty-nine percent, or 13, who responded *yes*, said that a warranty should be from more than one to five years. One respondent (3%) said a warranty should be for more than 20 years, and four (6%) did not specify (NS) a time frame.

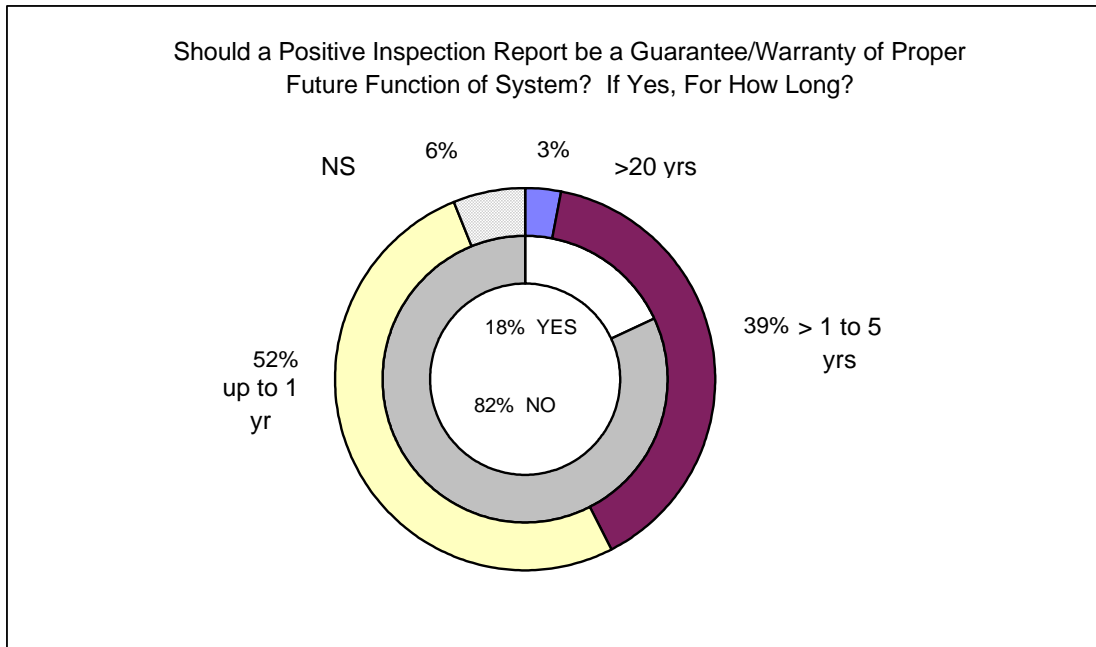


Figure 13. Is a Warranty Implied and For How Long?

Homeowner Responsibilities: Several questions were asked regarding a homeowner's responsibilities toward septic system maintenance and inspections, and who, if anyone, should require inspections. Figure 14 (question 10) shows that 60% of respondents agreed (somewhat to strongly) that homeowners of existing systems should be required to have their systems inspected. Twenty-two percent disagreed (somewhat to strongly) and 17% were neutral.

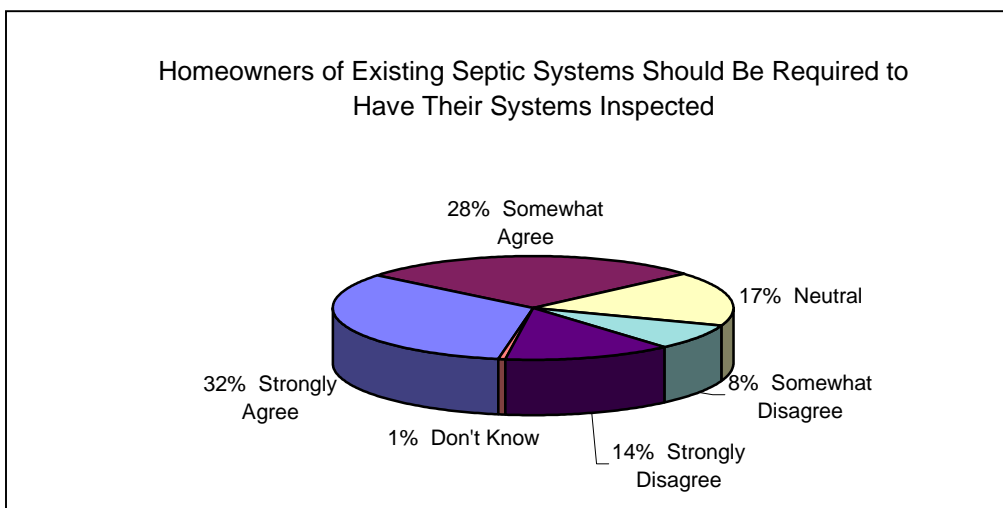


Figure 14. Requiring Homeowners to Have Systems Inspected

The survey also asked *when*, if ever, homeowners should be required to have their existing septic system inspected (question 14). Several choices were given and multiple answers were allowed, therefore the percentages total more than 100. The choice to inspect before selling a property meant that it would be the responsibility of the seller; before buying a property meant that it would be the responsibility of the buyer. Fixed intervals referred to inspecting on a regular basis (e.g., every 3, 5, 7, etc., years) regardless of whether the property was being bought or sold. Another option was to require inspections after repairs are completed following system malfunction. As Figure 15 shows, requiring the seller to have the system inspected before selling (49%) and requiring inspections at fixed intervals (45%) received the most responses, followed by requiring inspections after repairs (32%) and before buying (29%). Only 7% of the responses said inspections should never be required.

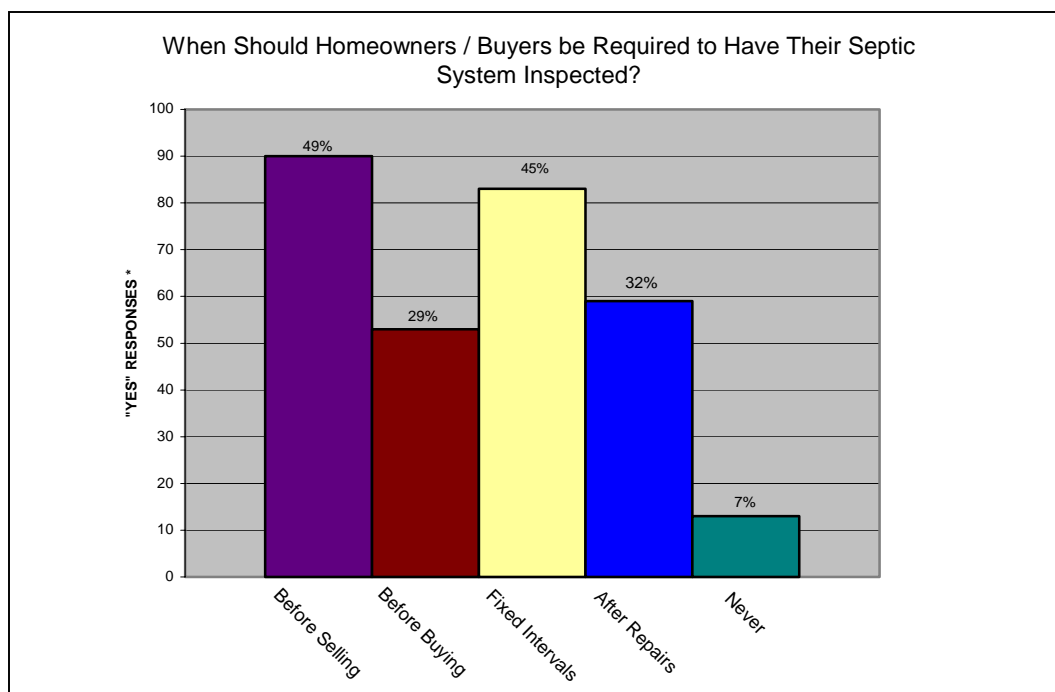


Figure 15. When to Require Inspections

The open-ended responses to the *other* category under Question 14 included the following:

- Proof of recent pumping by seller at time of sale
- Require pumping every 5-7 years and proof given when pay property taxes to County
- Seller should provide certification inspection report
- Inspect after flood conditions
- If they think the system is malfunctioning
- Inspect upon complaint (*two responses*)
- Not required, but have option to inspect
- Why inspect something that is working
- A system lasts 15 years; don't have problems until toilets don't work
- None of government business

Another question with regard to homeowner's responsibilities (question 11) was whether homeowners should be required to repair or replace malfunctioning septic systems to meet original installation standards. The Steering Committee had discussed this question at some length, considering whether to ask if failing systems should be repaired to meet current standards as opposed to original installation standards. The committee members who work in the onsite program said that their primary goal is to work with the homeowner to get the system repaired so that it works. In addition, they are aware that some older systems (or properties) may not be able to meet current standards and they are not going to condemn a property because of that. As shown in Figure 16, over 80% of respondents strongly to somewhat agreed that malfunctioning systems should be required to be repaired or replaced to meet original standards.

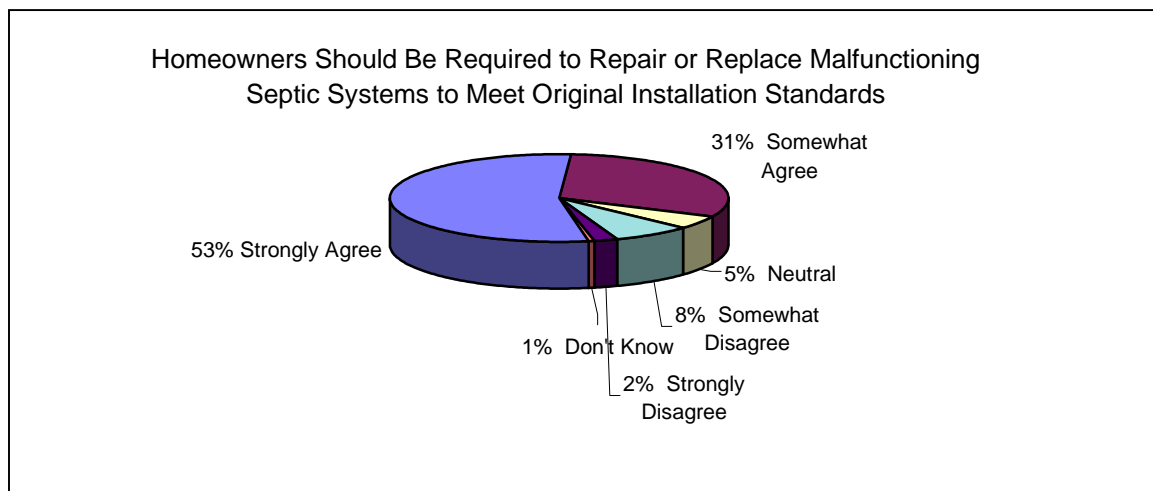


Figure 16. Require System Repairs / Replacements to Meet Original Standards

General Perceptions and Awareness: The following 10 figures (Figs. 17-26) illustrate the responses to questions 1-9 and question 13 of the survey. These questions were asked at the beginning of the survey to get respondents thinking about potential consequences of failing septic systems. They were also intended to discern how informed homeowners and buyers are about system locations and operation. Respondents were also asked if they knew of geographic locations that have experienced septic system malfunctions or problems within the last five years (question 12). Some of the responses were very general in nature, but many listed specific locations. See Appendix E for a listing of those responses. Appendix F lists all additional comments (question 29) from respondents.

The figures speak for themselves. What is interesting to note is that, at best, the perception among respondents is that homeowners *may* know *where* their system is located; however, they are generally not knowledgeable about *how* to operate and maintain their system. Perhaps this conclusion explains why most homeowners react to problems when they occur rather than practice preventative maintenance.

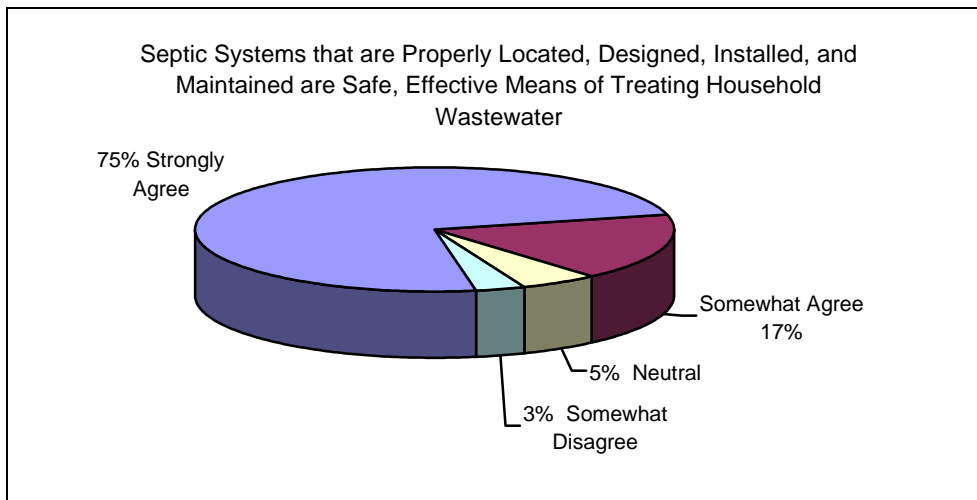


Figure 17. Septic Systems are Safe

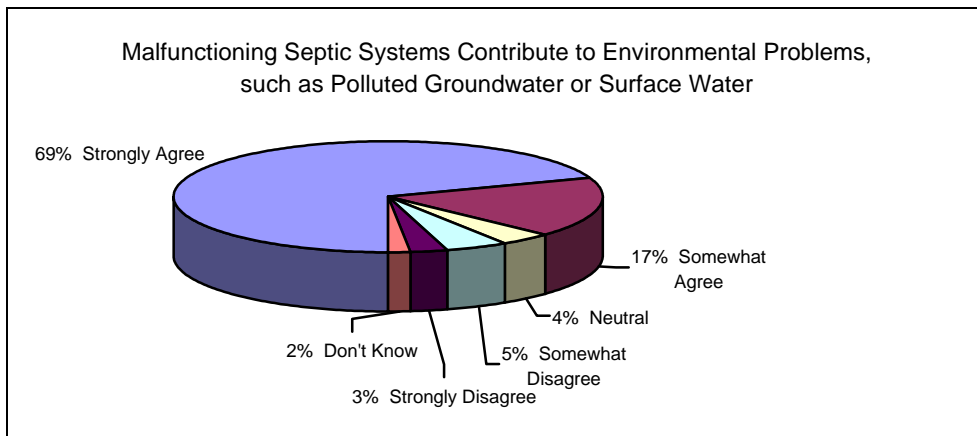


Figure 18. Malfunctioning Septic Systems Pollute

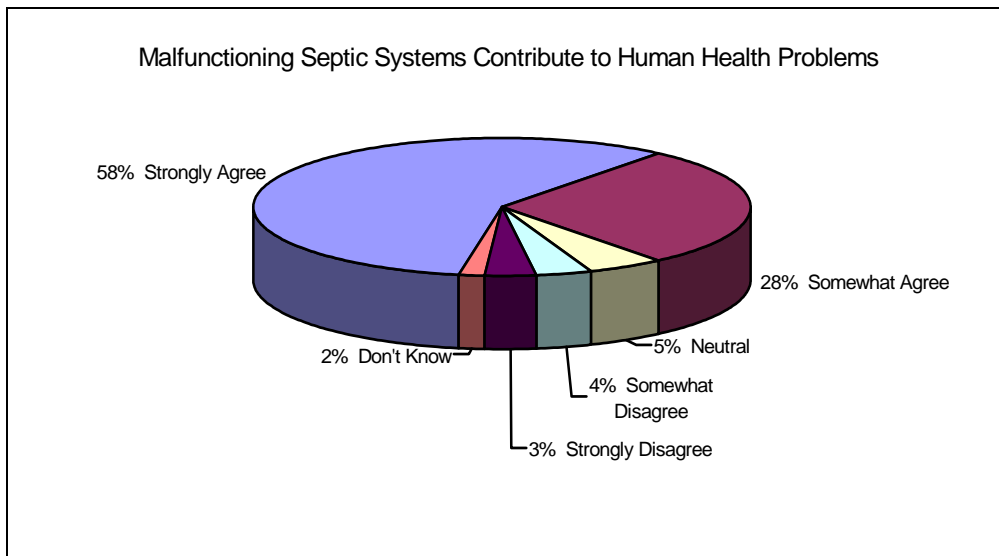


Figure 19. Malfunctioning Systems Cause Health Problems

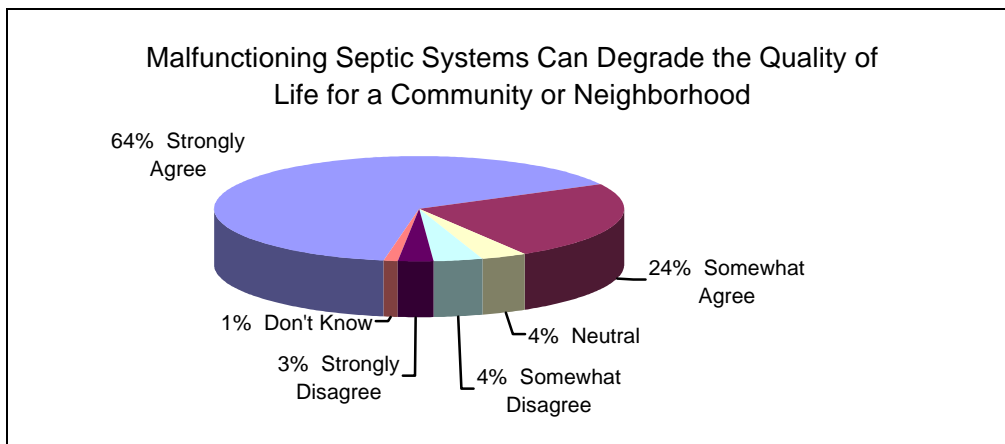


Figure 20. Malfunctioning Systems Can Degrade Communities

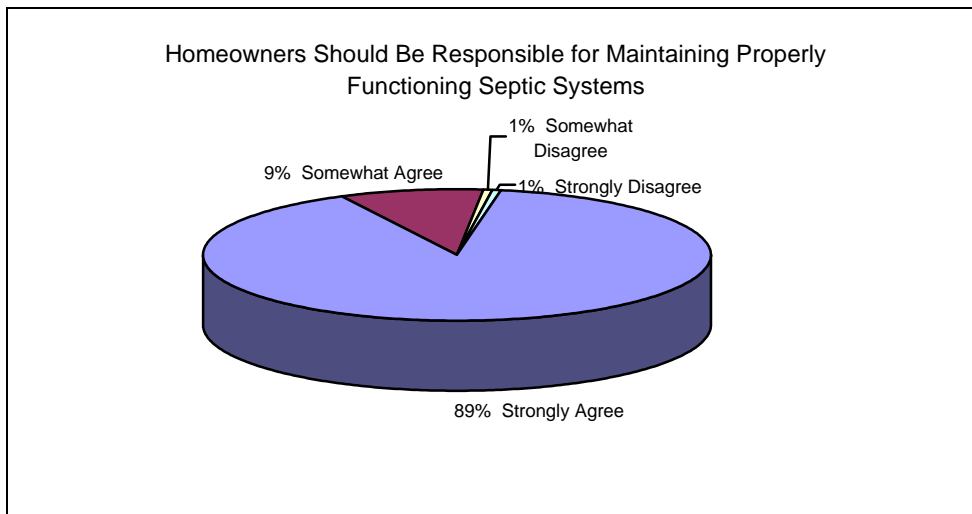


Figure 21. Homeowners Should Be Responsible

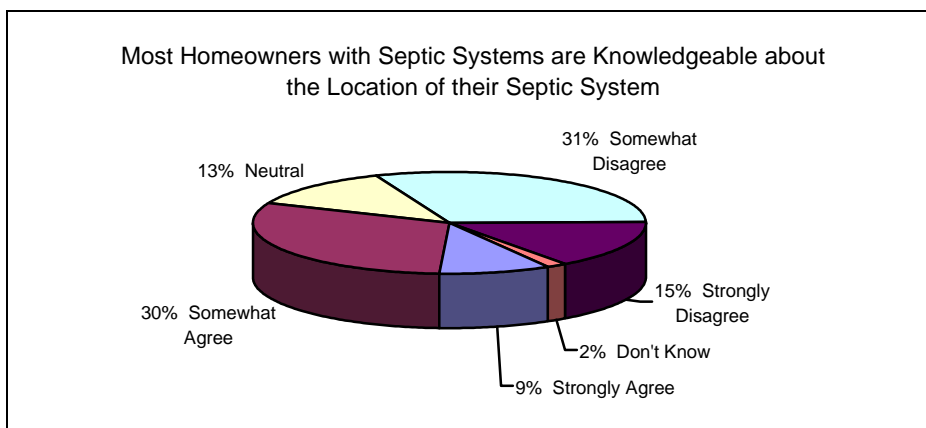


Figure 22. Homeowners are Knowledgeable About Location

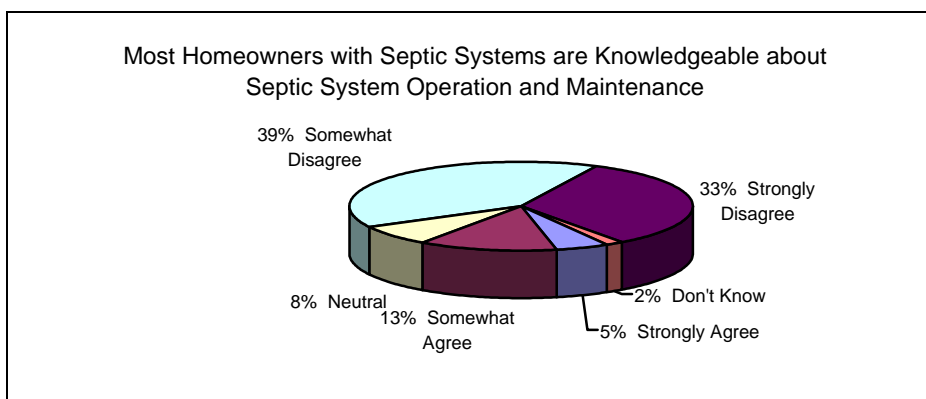


Figure 23. Homeowners Know Operation and Maintenance

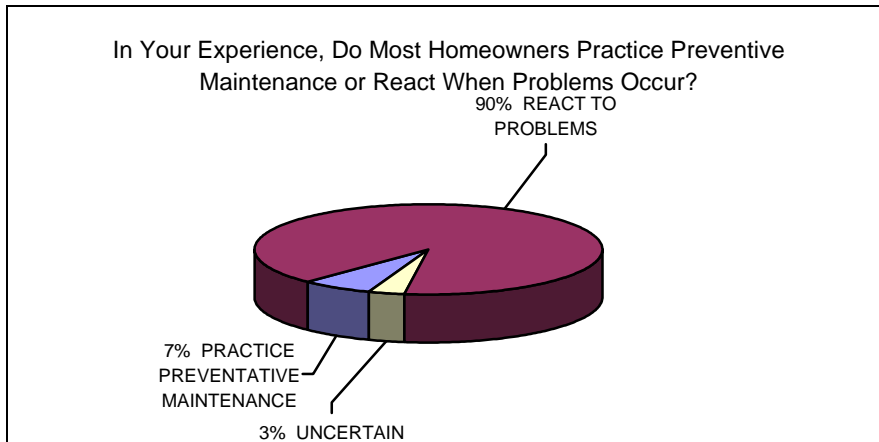


Figure 24. Homeowners Prevent or React to Problems

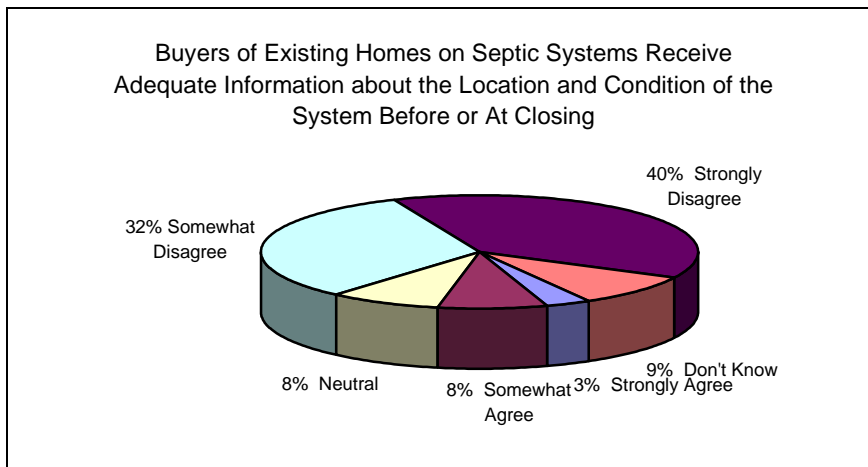


Figure 25. Buyers Informed of System Location and Condition

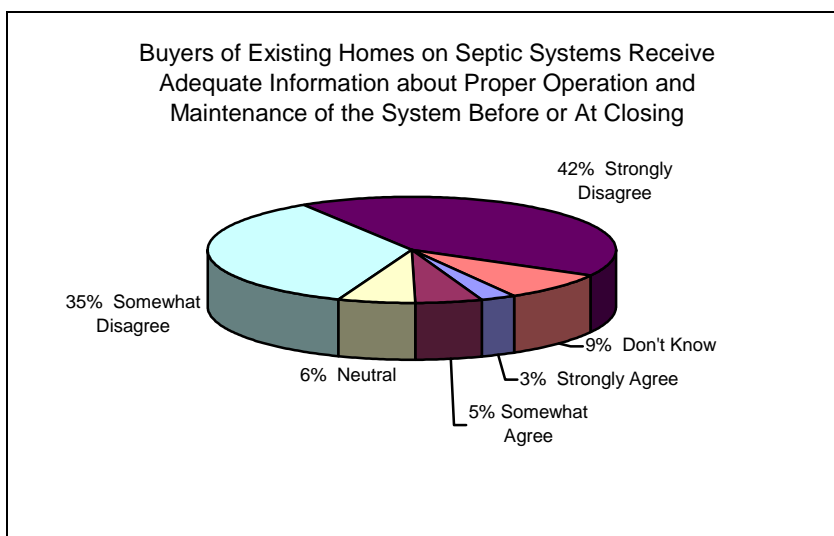


Figure 26. Buyers Informed of System Operation and Maintenance

SURVEY SUMMARY AND CONCLUSIONS

The data collected here show conclusively that the overwhelming majority of those having a connection to the septic system industry in coastal South Carolina believe that a standardized program to train septic system inspectors is needed. The mortgage lending industry is the only professional affiliation as a group that was evenly divided on this question.

An even greater majority of respondents said that both training and testing should be required of inspectors. When asked what professions, if any, could be exempted from training and testing septic system installers were chosen most frequently, followed by professional engineers, septic pumpers, and home inspectors. However, most preferred that no one be exempted from training or testing. In addition, respondents said that if they were in a position to require inspections, they would be more likely to require trained inspectors over exempted professionals. Homeowners were believed to be more likely to hire trained inspectors, although cost also was considered an important factor in deciding whom to hire. Write-in responses repeatedly suggested that it would also depend on who was doing the hiring – the home seller or home buyer.

Almost two-thirds of the respondents said they wanted to be notified of any future training courses to be offered. Not all of these, however, expressed a willingness to attend a training session. More than 60 respondents said they would attend a class in Charleston, 50 said they would attend one in Beaufort, and over 30 said they would attend one in Myrtle Beach. Several chose more than one location, so the total number is inconclusive. With a desired class size of around 25, there appears to be enough potential participants from survey respondents alone to hold a class in each location.

Currently, few entities require existing, operating septic systems to be inspected. Apparently, some mortgage companies require inspections for FHA loans, and some installers have done inspections for loan companies. A majority of the respondents said they would consider requiring inspections if a pool of trained inspectors was available. The mortgage lending industry was the only group that unequivocally said mortgage lenders should not require inspections prior to loaning money for a property sale. All of the other groups were strongly in favor of this requirement (except manufactured housing, which was more neutral). Aside from the mortgage industry being a potential driving force, slightly more respondents felt that if inspections were to be required, it should be a state requirement over a local government requirement (keep in mind that almost no one from state government was included in the survey).

Whereas most respondents indicated homeowners should be required to have their existing system inspected, there was some variation in dictating when it should be inspected. The most popular choice was that it should be the responsibility of the home seller to have the system inspected before selling a property. Requiring inspections at regular intervals, followed by requiring inspections after repairs are made were the second and third popular choices, respectively. The fourth most frequent response was to require the home buyer to have the system inspected before buying a property. Least popular of all was the choice to

never require homeowners to have their system inspected. The majority did agree that malfunctioning systems should be required to be repaired or replaced to meet original installation standards.

The overwhelming majority of respondents said that when an inspection report states a system is operating properly at the time of the inspection, it should not be taken as a guarantee or warranty of proper future function of the system. Of those who said it should be taken as a warranty, most clarified that by putting a time limit of up to one year, with slightly less saying it should be warranted for up to five years.

Whereas most respondents said that septic systems are safe and effective at treating household wastewater if properly designed and installed, they also said that malfunctioning systems can cause pollution and human health problems, and can degrade the quality of life for a community or neighborhood. Their overall perception was that, at best, homeowners may know where their system is located, but they are generally not knowledgeable about how to operate and maintain their system. Consequently, respondents overwhelmingly felt that although homeowners *should* be responsible for maintaining a properly operating system, they react to problems when they occur instead of practicing preventative maintenance. According to the majority of respondents, buyers of existing homes on septic systems are not properly informed about either the location of the system or how to properly operate and maintain the system.

In conclusion, the survey data indicate a strong interest in, and supports the need for, the development of a standardized program to train people to inspect septic systems. The data also support the conclusion that if a pool of qualified inspectors were available, both public and private entities would be more inclined to require inspections at some level (e.g., home selling, regular intervals, after repairs). The data also strongly suggest that the public who utilize septic systems, including potential buyers, need to be better informed about the location of their system and about proper operation and maintenance.

INSPECTOR TRAINING LOGISTICS

Locations and Logistics

For the initial pilot training program, the plan is to conduct a two-day training session in three locations: Horry County, Charleston County, and Beaufort County. These different locations may eliminate the need for an overnight stay, thus reducing costs for attendees and, ultimately, increasing participation. The Clemson Extension Agents in each of the three counties have identified suitable locations for the classroom segment, day one, of the training sessions. The requirements for each training location included:

- Ability to accommodate 25 students with desks or table tops
- Ability to have room darkened for PowerPoint, slide, and/or video presentations
- Ability to have lunch brought in if desired
- Suitable outdoor accommodations for a demonstration septic tank to be half-buried or placed in two sections on the ground, or alternatively, the class will travel to a newly installed, yet still exposed, septic system ready for final installation inspection.

The identified classroom locations in each county are as follows:

- Horry County – Horry County Extension Office located a few miles north of Conway on Hwy 701;
- Charleston County – United States Department of Agriculture / Clemson Experiment Station Facility located on Hwy 17 in Charleston;
- Beaufort County – Beaufort-Jasper Water and Sewer Authority Facility located on Snake Road in Okatie.

The agenda for day one will include an overview of septic systems, septic tank design and function, distribution boxes, drainfields, the basics of wastewater treatment in soils, an overview of the inspection process, types of inspections, safety issues, and how to conduct the inspection.

Day two of each of the training sessions will involve visiting a newly installed septic system at the final inspection stage (prior to being covered with soil), followed by conducting actual inspections of operating systems at two home site locations. The first stop at a new installation will provide participants an exposed view of system components that otherwise would require an established training center, or the temporary set up of system components at the classroom or other location. The DHEC Environmental Health onsite wastewater staff at the county or district offices or the Clemson Extension Agents will find, in advance, suitable system locations, obtain homeowner permission, and assist in the inspections. Vans will be rented for transportation and lunch will be provided.

Training Materials and Testing

Numerous training materials have been collected from various sources. These include, but are not limited to, the following:

- Onsite Wastewater System Operation and Maintenance – Trainer's Guide and Operator's Manual and Trainer's Resource Pack, developed for the National

- Environmental Training Center for Small Communities; materials include slides, overhead masters, and text for students and trainers
- Septic System Checkup: The Rhode Island Handbook for Inspection and Inspection Report Forms; also have training materials from attending the associated class
 - Septic Education Kit, produced by the Padilla Bay National Estuarine Research Reserve; materials include fact sheets, workshop outlines, workshop slides, sample brochures, and videos
 - An Insider's View of On-Site Wastewater Training: A Pre-Conference Workshop; workshop proceedings from North Carolina State University (NCSU) includes workshop planning details, sample course agendas, and chapter on adult learning principles
 - On-Site Wastewater Management Guidance Manual from North Carolina includes detailed information on system design, operation, and maintenance, and repairs and remedies for onsite systems
 - North Carolina Subsurface Wastewater System Operators Training School Manual
 - General PowerPoint presentation on overall septic system operation and maintenance; 30+ slides from Dr. David Lindbo at NCSU
 - PowerPoint presentation for Realtors on septic system design, operation and maintenance; 120+ slides from Dr. David Lindbo at NCSU
 - Digital video footage and digital photographs from Folly Beach Pilot Inspection Project
 - The newly released (2002) EPA Onsite Wastewater Treatment Systems Manual.
 - S.C. R.61-56 Individual Waste Disposal Systems Regulations

Information taken from the above resources will be used to develop a South Carolina inspector training manual. To facilitate taking notes, all of the material (with the exception of videos) presented during the two-day sessions will be provided as handouts. These handouts will be either part of the training manual or supplemental materials. All training materials will be provided in advance to the Steering Committee and the DHEC Onsite Wastewater Management Branch Director for comment and approval. The Director and committee members will be invited to observe any training practice or actual sessions. The training team should do a dry run of the classroom presentations and conduct at least one practice inspection prior to the first training session.

A test will be given at the end of day two. Although the final details are not complete, the test will include a written segment and, if possible, a field segment. All questions will come from material covered in the classroom and field. The core training team will coordinate the grading of the tests. Participants will receive written notification of their test results and a Certificate of Completion will be sent to those who pass.

Training Teams

The core training team includes Lisa Hajjar, Cal Sawyer, and Clifton Roberts. Additional training support will be provided by the Trident and Lowcountry Environmental Health District offices and by the Horry County and Beaufort County Extension offices. Relevant experience and training qualifications for the core team are as follows:

Lisa Hajjar – DHEC-OCRM – project manager for this training project; completed septic system inspector training certification program at University of Rhode Island in May 2001; conducted pilot septic system inspection program for City of Folly Beach in 1999-2000; conducted homeowner workshops on septic system operation and maintenance; participated on committee largely responsible for Isle of Palms septic system inspection and maintenance ordinance; developed DHEC fact sheets and folder for homeowners about septic system operation and maintenance; conducted or participated in various research projects regarding septic system since 1980.

Cal Sawyer – S.C. Sea Grant Extension and Clemson Extension – primary cooperator on this training project; completed Basics of On-Site Sewage class at NCSU in December 2001; has conducted numerous Nonpoint Education for Municipal Officials workshops throughout South Carolina.

Clifton Roberts – recently retired from DHEC Division of Onsite Wastewater Management – worked 23 years for DHEC, including 11 years as a Supervisor, in the Onsite and Environmental Health programs; Registered Environmental Health Specialist; developed practice of using tire chips as an aggregate in septic systems; helped develop many alternative and innovative septic systems in use around State; has made and continues to make presentations across the country about septic systems.

Publicity

The primary means of publicity will be through direct mail outs of a brochure describing the training program, including all three class locations and dates. Over 60 percent of survey respondents indicated that they wanted notification of any training classes. Most likely, the brochures will be mailed to the same individuals who received the survey. In addition, brochures will be sent to those on the various lists who were not originally sent a survey. For example, only half of the septic installers in the eight coastal counties were sent a survey, but all of the installers will be sent a brochure. Additional means of publicity that have been discussed with Gary Forrester, the Horry County Extension Agent, include a mention of the program on the television show Southern Style and on a talk radio show, announcements sent to various local cable channels, a feature story in the Sunday business section of area newspapers, and some type of advertisement or notice at the Myrtle Beach Home Show in September or October.

Costs

The cost for attending a two-day training session for each individual will be minimal (possibly \$50), but as of yet has not been set. The amount charged will need to cover the cost of lunches and refreshments. Four thousand dollars is budgeted for workshop expenses, \$4,340 is budgeted for equipment (inspection tools, etc.) and \$3,000 is budgeted for training manuals, brochures, and publicity. Additional workshop expenses include van rentals (for transporting participants to inspection sites), septic pumping (6 total, approximately \$1,200 or more due to the time involved), travel accommodations for trainers, and training supplies (nametags, certificates, notebook paper, etc.). We do not anticipate having to rent training facilities as preliminary arrangements have been made to use public facilities (Clemson

Extension offices and the Beaufort-Jasper Water and Sewer Authority facility). Once actual costs have been determined and a budget for each training session is determined, then the cost to be charged for each participant will be set.

DETERMINING PROGRAM SUCCESS

In determining the effects of any educational endeavor, the goals and objectives of the program are usually the guides from which potential outcomes are determined. The goal of this project was to develop a voluntary OSDS inspector training and certification program, and, ultimately, receive full approval of South Carolina's Coastal Nonpoint Pollution Control Program (CNPCP). There were also three objectives, which, if met, would lead to the achievement of our program goal:

- Objective 1 -Assess the feasibility of developing a pilot OSDS inspector training and certification program for the inspection of conventional, soil-based onsite disposal systems.
- Objective 2 - Based upon positive recommendations developed under Objective 1, implement a pilot OSDS inspector training and certification program.
- Objective 3 - Meet the condition of the CNPCP.

There are three (3) levels of success that could be considered for this OSDS inspector training development program. The first level would be whether a pool of educated and trained inspectors was created as a result of this pilot effort. This level of achievement can be assessed by means of an evaluation instrument and examination of statistical evidence following the final examination. If a large percentage of those taking the test will have passed, then a preliminary or cursory level of success will have been achieved.

Several communities along the coast of South Carolina are currently considering the adoption of septic system maintenance ordinances. If ordinances required inspections as part of their implementation, then a pool of trained and qualified inspectors would be necessary to meet the demand. The second level of success will be met, then, if the training provided, as a result of this project, the inspectors necessary to meet such demand. Ascertaining this level of success will be difficult and likely require personal contact with representatives from each of the affected jurisdictions. If they indicate that their community's needs were met by DHEC-trained inspectors, then success could be claimed.

A final level of success can be determined by whether this pilot project is credited fully, or in part, with meeting the condition of the CNPCP. As stated in the introduction, one of the conditions listed in the 1998 CNPCP conditional approval was to develop a program for the inspection of operating OSDS. This pilot project was developed to facilitate the voluntary adoption of local programs requiring the inspection of operating OSDS, by means of providing qualified inspectors. Therefore, if this pilot project is credited with meeting the condition of the CNPCP, thus moving the program toward full approval, then it will have been successful.

REFERENCES CITED

Salant, P. and D.A. Dillman, 1994, How to Conduct Your Own Survey, John Wiley & Sons, Inc., New York, 232 p.

APPENDIX A.

**STEERING COMMITTEE
AND
TRAINING TEAM**

STEERING COMMITTEE

<p>Mr. Don Campbell, Director Low Country Health District 600 Wilmington St. Beaufort, SC 29902 (843) 525-7633 Fax (843) 525-7621 campbdg@beuftr63.dhec.state.sc.us</p>	<p>Mr. Richard Behling Charleston Trident Assn. Of Realtors 298 Williams Ave. St George, SC 29477-0116 (843) 563-5005 Fax (843) 563-5095 BehlingSold@infoave.net</p>
<p>Mr. Stuart Crosby, Director Trident Health District 4045 Bridgeview Dr., Suite B-154 North Charleston, SC 29405-7464 (843) 202-7020 Fax (843) 202-7050 crosbysg@dhec.state.sc.us</p>	<p>Mr. Steve Robinson, Public Works Director City of Folly Beach P.O. Box 48 Folly Beach, SC 29439 (843) 588-2447 Fax (843) 588-7016 sgrobinson@msn.com</p>
<p>Mr. Carlisle Dawsey Coastal Carolinas Association Of Realtors P.O. Box 416 Conway, SC 29528 (843) 248-6363 Fax (843) 248-6721 cdawsey@sccoast.net</p>	<p>Ms. Linda Tucker, City Administrator City of Isle of Palms P.O. Box 508 Isle of Palms, SC 29451 (843) 886-6428 Fax (843) 886-8005 ltucker@iop.net</p>
<p>Mr. Johnnie Weaver Coastal Carolinas Association Of Realtors P.O. Box 2668 Pawley's Island, SC 29585 (843) 237-8889 Fax (843) 237-7953 jjweaver@sccoast.net</p>	<p>Mr. Charles W. McAlister LLR Program Coordinator Residential Builders Commission 110 Centerview Dr. P.O. Box 11329 Columbia, SC 29211-1329 (803) 896-4621 Fax (803) 896-4656 macalisc@mail.llr.state.sc.us</p>
<p>Mr. Roger Scott, Director Onsite Wastewater Management Branch 2600 Bull St. Columbia, SC 29201 (803) 896-0641 Fax (803) 896-0645 scottrd@dhec.state.sc.us</p>	<p>Ms. Jennifer Wingard-Hall Director of Political Affairs South Carolina Association of REALTORS P.O. Box 21827 Columbia, SC 29221-1827 (800) 233-6381 jennifer@screaltors.org</p>

TRAINING TEAM

Project Manager:

Lisa Hajjar
DHEC-OCRM
1362 McMillan Ave, Suite 400
Charleston, SC 29405
(843) 747-4323, ext. 137
hajjarlm@dhec.state.sc.us

Clemson/Sea Grant Cooperator:

Cal Sawyer
Clemson Extension / Sea Grant
259 Meeting St.
Charleston, SC 29401
(843) 722-5940
calvins@clemson.edu

Project Consultant:

Clifton Roberts
1958 Jonestown Rd.
Galivants Ferry, SC 29544
(843) 340-2402
FAX (843) 358-2195

Clemson University Extension Service:

BEAUFORT COUNTY

Clemson Extension Service
100 Ribaut Rd.
Box 189
Beaufort, SC 29901
(843) 470-3655

CHARLESTON COUNTY

Cal Sawyer
Clemson Extension / SC Sea Grant Extension Program
(Same as above)

HORRY COUNTY

Gary Forrester
Clemson Extension Service
Box 1005
Conway, SC 29526
(843) 365-6715
FAX (843) 365-6719
gfrstr@clemson.edu

APPENDIX B.

COVER LETTER AND SURVEY



**Office of Ocean and Coastal
Resource Management**

1362 McMillan Avenue, Suite 400
Charleston, South Carolina 29405
(843) 744-5838 (843) 744-5847 (fax)

Christopher L. Brooks, Deputy Commissioner

June 5, 2001

Dear Survey Participant:

Approximately one-third of all new homes in the eight coastal counties of South Carolina utilize septic systems for treating household wastewater in lieu of using centralized sewer. Development pressures are ever increasing in coastal South Carolina, and building is taking place on more environmentally sensitive lands. In addition, many of the existing septic systems are over 30 years old. Inadequate maintenance of septic systems can result in failed systems requiring repairs at a minimum and sometimes system replacement. Repair or replacement costs can be thousands of dollars, whereas periodic inspection and pumping cost about \$150-250. The management of septic systems has become a national issue, and the Environmental Protection Agency is in the process of finalizing voluntary management guidelines for states or local governments.

The South Carolina Department of Health and Environmental Control Office of Ocean and Coastal Resource Management (DHEC-OCRM) and Clemson University are conducting a joint effort to study the need to train non-DHEC inspectors for existing septic systems, and then, if warranted, to develop a pilot training program in coastal South Carolina. At this point we are conducting a survey to determine if there is an interest in such a program. We need your input to determine the level of interest that exists.

Current DHEC regulations require that only newly installed septic systems be inspected for final approval. Final inspections are done by DHEC inspectors at the county level. In South Carolina, routine maintenance and inspections of existing, operating septic systems are not required by state law and are typically left up to the individual homeowner. Several coastal communities have expressed an interest in managing septic systems at some level, but lack the appropriate tools or trained personnel to set up a program. And, just as an individual purchasing a used car is interested in its maintenance history, buyers of existing homes have a vested interest in knowing that their home will meet their most basic needs.

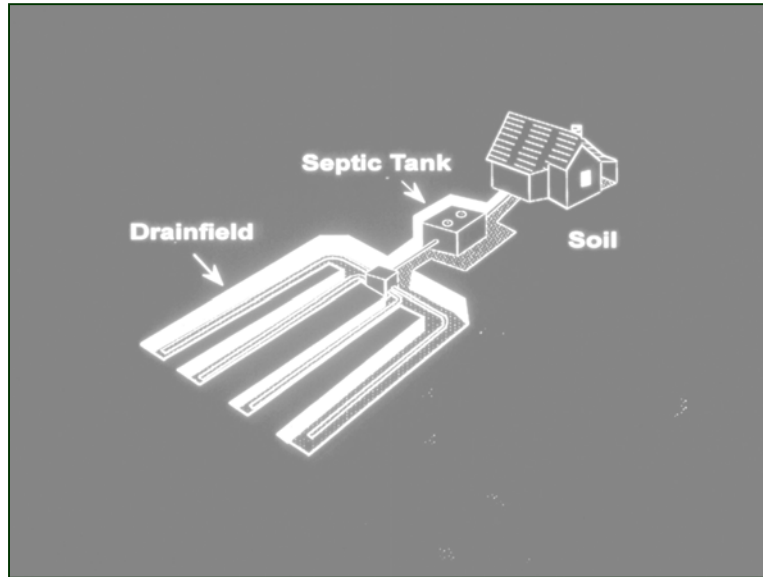
As stated above, your input into this project is important and needed. Please take the time to fill out the enclosed survey and return it by June 22nd. We also welcome additional comments or questions which can be added to the back of the survey. Thank you very much for your participation.

Sincerely,

Lisa M. Hajjar
DHEC-OCRM

Calvin B. Sawyer
Clemson University

Septic System Survey



**A survey about the future
management
of septic systems
in coastal
South Carolina**



Ocean and Coastal
Resource Management

Return in enclosed envelope to:
Septic System Survey
DHEC-OCRM
1362 McMillan Ave., Suite 400



Charleston, SC 29405

Survey Instructions:

- A. Please fill out the survey on behalf of your employer or profession.
- B. Assume that all references to homeowners or property refer to those that utilize septic systems.
- C. Assume that all references to inspections refer to existing systems, not new installations.
- D. Please return the completed survey by **June 22, 2001** using the enclosed envelope or send to:
Septic System Survey

DHEC-OCRM

1362 McMillan Ave., Suite 400
Charleston, SC 29405

**QUESTIONS REGARDING THE SURVEY OR REQUESTS FOR ADDITIONAL
SURVEYS MAY BE DIRECTED TO: LISA HAJJAR AT (843) 747-4323, EXT. 137**

Below is a list of statements on the potential impacts from septic systems, and on homeowner and homebuyer knowledge and actions regarding septic systems. Please indicate how much you agree or disagree with each statement. (<i>Circle one response for each item.</i>)	STRONGLY AGREE	SOMEWHAT AGREE	NEUTRAL	SOMEWHAT DISAGREE	STRONGLY DISAGREE	DON'T KNOW
1. Septic systems that are properly located, designed, installed, and maintained are safe, effective means of treating household wastewater.	1	2	3	4	5	DK
2. Malfunctioning septic systems contribute to environmental problems, such as polluted groundwater or surface water.	1	2	3	4	5	DK
3. Malfunctioning septic systems contribute to human health problems.	1	2	3	4	5	DK
4. Malfunctioning septic systems can degrade the quality of life for a community or neighborhood.	1	2	3	4	5	DK
5. Homeowners should be responsible for maintaining properly functioning septic systems.	1	2	3	4	5	DK
6. Most homeowners with septic systems are knowledgeable about the location of their septic system.	1	2	3	4	5	DK
7. Most homeowners with septic systems are knowledgeable about septic system operation and maintenance.	1	2	3	4	5	DK
8. Buyers of existing homes on septic systems receive adequate information about the location and condition of the system before or at closing.	1	2	3	4	5	DK
9. Buyers of existing homes on septic systems receive adequate information about proper operation and maintenance of the system before or at closing.	1	2	3	4	5	DK
10. Homeowners of existing septic systems should be required to have their systems inspected.	1	2	3	4	5	DK
11. Homeowners should be required to repair or replace malfunctioning septic systems to meet original installation standards.	1	2	3	4	5	DK

12. Are you aware of geographic areas that are experiencing or have experienced septic system malfunctions or problems within the last 5 years? *(Please circle the number of your response.)*
- 1 No
 - 2 Yes
- Where? _____
13. In your experience, do most homeowners of septic systems practice preventive maintenance (e.g., have tank pumped regularly) or call for service only when problems arise (e.g., slow drains, sewage back ups, sewage or odors in yard)? Preventive maintenance *does not* include the use of septic tank additives. *(Please circle the number of your response.)*
- 1 Practice preventative maintenance
 - 2 React when problems occur
 - 3 Uncertain or neutral
14. Should homeowners be required to have their existing septic system inspected... *(Please circle all that apply.)*
- 1 Before selling property (responsibility of seller)?
 - 2 Before buying property (responsibility of buyer)?
 - 3 At a fixed interval (e.g., every 3,5, 7, etc., years) regardless of buying or selling?
 - 4 After repairs are completed following system malfunction?
 - 5 Never?
 - 6 Other _____
15. If septic system inspections were required, should it be a state or local government requirement? *(Please circle the number of your response.)*
- 1 State
 - 2 Local government
 - 3 Inspections should not be required
16. Should mortgage lenders require that septic systems be inspected prior to loaning money for a property sale? *(Please circle the number of your response.)*
- 1 Yes
 - 2 No
 - 3 Uncertain or neutral
17. Should a positive inspection report (i.e., properly functioning at time of inspection) be a guarantee/warranty of the proper future function of the system? *(Please circle the number of your response.)*
- 1 Yes (For how long? _____)
 - 2 No (Only ensures proper functioning at time of inspection)

18. In your opinion, what legal ramifications potentially exist for state or local governments, mortgage lenders, etc., who choose to require septic system inspections?

19. Should inspectors of existing septic systems be required to: *(Please circle the number of your response.)*

- 1 Attend specialized training and pass standardized test?
- 2 Pass standardized test in lieu of training?
- 3 Uncertain or neutral?

20. Which profession, *if any*, should be exempted from specialized training and testing? *(Please circle all that apply.)*

- 1 Professional Engineer
- 2 DHEC-licensed septic system installer
- 3 DHEC-licensed pumper
- 4 State-licensed home inspector
- 5 Other _____
- 6 None should be exempted from training
- 7 None should be exempted from testing
- 8 Uncertain or neutral

21. What might influence a homeowner's decision to hire an inspector? *(Please circle the number of your response.)*

- 1 Inspector has completed training and passed test
- 2 Inspector is an exempted professional
- 3 Decision based on cost alone regardless of training or qualifications
- 4 Other _____

22. If your professional or governmental organization were to require inspections of septic systems, would you be more inclined to require the use of trained inspectors instead of exempted professionals? *(Please circle the number of your response.)*

- 1 Require specially trained inspectors
- 2 Allow either trained inspectors or exempted professionals
- 3 Uncertain or neutral
- 4 Does not apply to my profession

23. If a pool of trained, septic system inspectors were available, would your professional or governmental organization be more inclined *to consider* requiring the inspection of septic systems? *(Please circle the number of your response.)*

- 1 Yes
- 2 No
- 3 Does not apply to my profession

24. Does your professional or governmental organization currently require the inspection of septic systems? *(Please circle the number of your response.)*

- 1 Yes *Briefly describe requirement or attach separate sheet* _____
2 No
3 Does not apply to my profession

25. Based on your opinion, do you see the need for a standardized program to train individuals to inspect existing septic systems? *(Please circle the number of your response.)*

- 1 Yes
2 No
3 Uncertain or neutral

26. Would you or someone in your organization be willing to attend a two-day pilot inspection training course offered by DHEC and Clemson University in Myrtle Beach, Charleston, or Beaufort? *(Please circle the number of your response.)*

- 1 Myrtle Beach
2 Charleston
3 Beaufort
4 No

27. What is your professional affiliation? *(Please circle the number of your response.)*

- 1 City government
2 County government
3 House inspections
4 Manufactured housing
5 Mortgage lending
6 Realtor / real estate
7 Septic installation
8 Septic pumping
9 Utility company
10 Other _____

28. Would you like to be notified of septic system inspection training courses if and when they are offered? *(Please circle the number of your response.)*

- 1 No
2 Yes If yes: Name _____

Company: _____

Address: _____

E-mail Address: _____

29. Please use the space below or attach a separate sheet for additional comments:

Thank you for your time and participation! Results of the survey will be posted in early summer 2001 on the DHEC-OCRM web site: <http://www.scdhec.net/ocrm/>
Please return this questionnaire **by June 22, 2001** in the enclosed postage-paid envelope to:

Septic System Survey
DHEC-OCRM
1362 McMillan Ave., Suite 400
Charleston, SC 29405

APPENDIX C.

DESCRIPTION OF SOME ESTABLISHED INSPECTION PROGRAMS

DESCRIPTION OF SOME ESTABLISHED INSPECTION PROGRAMS

Rhode Island:

In 1987, the Rhode Island State Legislature passed enabling legislation giving local governments the ability to establish waste management districts to oversee the maintenance of existing septic systems. In 1994, the University of Rhode Island (URI) Cooperative Extension developed the On-site Wastewater Training (OWT) Program. The OWT Program consists of classroom and hands-on in-field training covering septic system siting, design, installation, inspection, operation, and maintenance. The OWT Center is an in-field training site that consists of several above-ground innovative septic system designs located adjacent to an existing septic system research/demonstration facility. Classroom and in-field training is done primarily by Cooperative Extension staff, but private sector, State, and Federal cooperating agencies/groups also contribute in their areas of expertise.

The project manager for South Carolina's pilot program, the subject of this report, attended the two-day Inspection 100 – Conventional Septic System Inspection Short Course offered by URI in May 2001. A Certificate of Registration, with a unique registration number, was received the following month. Day one of the course was in the classroom during which the basics of system function, system components, soils, and the inspection process were covered. Day two started at the OWT Center where above-ground mock-ups of systems were observed, followed by performing actual system inspections at two homes. Both a written and practical field exam was then administered back at the training center following the second inspection. The class fee, including the exam, was \$375. The basic format of the URI course will be followed for South Carolina's pilot program, with the exception of a training center facility, that will not be developed at this time.

Massachusetts:

The inspector training program in Massachusetts involves a one-day classroom session followed by a two-hour exam at a cost of \$50 (as of 1999). Certain professionals are exempted from training and testing in Massachusetts. Massachusetts Registered Professional Engineers with a concentration in civil, sanitary or environmental engineering, Massachusetts Registered Sanitarians and Certified Health Officers automatically are considered System Inspectors under Title 5. In addition, the following individuals may become inspectors if they take the Department of Environmental Protection (DEP) approved course and pass the DEP approved exam: Board of Health members and agents; Engineers-in-Training (EIT certified) with a concentration in civil, sanitary or environmental engineering; professional home inspectors; permitted/licensed septage haulers; permitted system installers; and other individuals with a minimum of one year of demonstrated experience in septic system inspection.

As of late 1999, they had about 5,000 certified inspectors, 3,000 of whom took the training course. About 25,000 – 30,000 inspections are done each year. The state requires inspections of operating systems within two years prior to selling a property. The inspector has 30 days to submit an inspection report to the Board of Health. The inspection form is 13

pages long and looks at specifics of failure criteria, house sizing, etc. Repairs must be done within two years unless a health hazard exists, in which case the Board of Health determines when repairs must be made.

North Carolina:

North Carolina has developed a training and certification program for subsurface system operators in the state. All nonconventional septic systems (e.g., low pressure pipe, drip irrigation, mound, aerobic treatment, etc.) must be inspected and maintained by a certified operator at specified intervals (six-months to five-years, depending on system type) under a contract between the homeowner and the management entity. The program, which includes hands-on field training at a nationally recognized training facility, is offered collaboratively by North Carolina State University, the North Carolina Cooperative Extension Service, and the North Carolina Department of Environment, Health and Natural Resources.

To be a certified operator (“Operator-in-Responsible-Charge”) for a management entity, individuals must attend the Subsurface Wastewater System Operator Training School and must pass the examination administered by the Water Pollution Control System Operators Certification Commission. The school costs \$249 for in-state residents and does not include the \$85 exam fee. One-day refresher courses are also offered under the same program.

Washington:

The Northwest On-site Wastewater Training Center (NOWTC), among many classes offered, holds classes for monitoring and maintenance professionals (costing \$375 and \$125, respectively). The Seattle & King County Public Health Agency has developed a new Certificate of Competency category of “On-Site System Maintainer” (OSM). An OSM conducts periodic on-site sewage system (OSS) monitoring, ensures that each system owner is properly operating and maintaining his/her system and that the system is functioning properly. The OSM requires a minimum level of experience and education as well as to pass the Maintainer Competency Exam given by Public Health – Seattle & King County (PH) to become certified. Continuing education credits are required to obtain annual renewals. During the inspection the OSM must complete an On-Site Sewage System Operation/Performance Monitoring Report form provided by PH. The report is to be given to the OSS owner at the time of the inspection and to PH, along with a \$10 filing fee, within 30 days of the inspection. The OSM may only perform preventive maintenance activities (e.g. filter cleaning) and limited repairs to the system. ‘Limited repair’, as defined in the King County On-Site Sewage Code, Title 13 (13.08.226), means:

“the replacement, addition or alteration of a broken or malfunctioning building sewer pipe, sewage tank lid, sewage tank baffles, sewage tank pumps, pump control floats, pipes connecting multiple sewage tanks and drainfield inspection boxes and ports where the subsurface soil absorption system is not failing.”

A limited repair permit application must be filed with PH within 5 days of the completion of the limited repair. The limited repair permit signed by the OSM must be submitted with the monitoring report to PH.

Minnesota:

The Minnesota Pollution Control Agency has developed technical standards and criteria, which is contained in MN Rules Chapter 7080. However, local government units (LGU) can modify the standards to be either more or less restrictive (MN Statutes 115.55). The standards must be followed in Department of Natural Resources designated shoreland areas,

wellhead protection areas, and for food, beverage and lodging establishments licensed by the Minnesota Department of Health (MN Statutes 115.55).

Local units of government are responsible for administering and enforcing their local septic system ordinance. This includes assuring there is a septic system ordinance with a permitting and inspection program. There are no specific "rules" governing the methods that must be used to conduct an inspection of an existing individual sewage treatment system (ISTS). Inspection guidelines are offered to assist in conducting an inspection, but the methods are left to professional judgment. Existing systems must be inspected when there is a bedroom addition permit request (if the LGU has a permitting program for bedroom additions). Existing systems must also be inspected when any building permit or variance is requested for systems located in a shoreland area. Local ordinances or lending institutions may require inspections at other times, such as at property transfer. ISTS disclosure is required by state law. The disclosure does not require a compliance inspection. However, a compliance inspection must be conducted if anyone other than the property owner evaluates the system for disclosure purposes. Sometimes an inspection request is made by the buyer, the mortgage lender, banker, real estate agent, etc. A compliance inspection is then required.

The State (Minnesota Rules [MR], Chapter 7080) requires individuals who install, site-evaluate, design, maintain, or pump an ISTS to be registered, with some exceptions. At a minimum, all state-licensed ISTS businesses must have at least one registered ISTS professional. This person is called a Designated Registered Professional. State or local units of government must have all their ISTS employees registered as ISTS professionals. One-day inspector workshops are offered by the University of Minnesota, in cooperation with the Minnesota Pollution Control Agency, for a cost of \$159.

NSF International:

NSF International is in the final stages of development of a national accreditation program for individuals who perform inspections of onsite wastewater disposal systems. The program was recently piloted in two Southeastern Michigan counties. It is intended to focus primarily on inspections typically performed at the time of a real estate transfer. This Accreditation program consists of a written and practical examination, as well as continuing education activity. Individuals who demonstrate their competency by passing both examinations will be designated as Accredited. Accredited individuals will be published on the NSF web site and in the NSF Listing book, which is distributed to industry, users, regulators, and other interested parties. To apply, the applicant must show proof of a high school diploma or equivalent, as well as evidence of one year of active field experience conducting onsite inspections or completion of a training course. The completed application and supporting documentation, along with the application and written examination fee of \$295.00, is to be returned to NSF. Upon receipt of the application, a time and place for the written examination will be arranged. Written examinations can be administered at various places throughout the US, such as universities, public libraries, etc. The written examination consists of 100 multiple-choice questions and will cover a broad range of topics relating to onsite wastewater inspections, including key terminology, mathematics and calculations, sewage disposal system design, and operation, inspection procedures, and safety.

After successfully completing the written examination, the individual must take the practical exam to complete the Accreditation requirements. NSF will issue an invoice for the practical examination, which must be paid prior to taking the test. The standard practical examination fee is \$675.00, however group discounts will also be offered. This examination includes a hands-on inspection of an onsite wastewater disposal system. The examination will be conducted at an actual installation. The individual will be required to conduct the inspection while being graded for performance by a proctor. The individual is also responsible for supplying any equipment needed to conduct the inspection. The individual will be graded on pre-inspection preparations, general site evaluation, treatment tank evaluation, soil absorption system evaluation, and reporting.

Once the individual successfully completes both examinations, NSF will issue a contract and an ethics statement that the individual must sign and submit to NSF before Accreditation can be granted. The contractual agreement provides NSF with assurance that the Accredited inspector will abide by the program policies and provides the inspector with authorization to represent their self as Accredited. An annual accreditation fee of \$215 is included in the first year exam fees. Accredited inspectors will be required to requalify every five years. Requalification can be accomplished by successfully completing the examinations or by earning requalification units through programs and activities of continuing education.

APPENDIX D.

RESPONSES TO QUESTION 18 OF SURVEY

RESPONSES TO QUESTION 18 OF SURVEY

In your opinion, what legal ramifications potentially exist for state or local governments, mortgage lenders, etc., who choose to require septic system inspections?

(Question 18) COMMENTS	LEGAL RAMIF	NONE	OTHER	DON'T KNOW
none if required for closing & contracted; extensive if government certifies operation.	1	1		
closing delays - denial of services	1			
Just as any other inspection, there should be accountability for failure of specified criteria.	1			
perceived responsibility for system malfunction	1			
...some lawyer will figure there's a way to sue someone over	1			
A great deal; who is responsible for whom & what?	1			
Breaking into old tanks - causing damage. Digging up properties - causing damage.	1			
Could be held responsible for malfunction within 'x' months of post inspection	1			
expense / tax / delays from bureaucratic follies	1			
I feel after an approved inspection, the homeowner will expect their system to function properly for (x) amount of yrs. If it fails before that allotted time they may feel that they could take action. I see no way... put an active life expectancy on a system	1			
If septic found in a failed operation position homeowner or mortgage lenders to make sure repairs or replacements are sought out.	1			
If system is not properly inspected or malfunctions after inspection, the state or local government could be held responsible by homeowner .	1			
If system fails after approved inspection, who will be held responsible?	1			
If the public takes this inspection as a warranty.	1			
If there are ordinances to stop sale of house due to septic repairs, lawsuits could result (takings laws).	1			
If you require inspection, you take on responsibility of providing certified inspectors, and accept liability for a proper functioning system if your requirements are met by homeowner	1			
Implied warranty	1			
liability for system failure	1			

(Question 18) COMMENTS	LEGAL RAMIF	NONE	OTHER	DON'T KNOW
Liability if at anytime in the future there is a malfunction or a problem with the system. Also environmental liability.	1			
minimal	1			
mortgage lender has a right to know system is functioning at time of purchase but that in itself means a warranty is issued.	1			
Possible w/failure of system not long after insp. 1 yr. Perhaps make certain it as at time of inspection that its properly functioning.	1			
Potential kickback about faulty systems which slipped by prior to regs.	1			
Property has been cert as in good working order for the sale & for number of yrs after.	1			
property rights issues	1			
property rights lawsuits; malfunction (later) lawsuits	1			
responsibility for system failures?	1			
Set themselves up to be liable in case of failure of system if inspection is required on a periodic basis (i.e., 2, 5, 7 years)	1			
The inspection of system not in use will not indicate problems that may exist when in use. An inspection report may be interpreted as a guarantee of function.	1			
The inspections would need to be in place w/enough time to gather information about rate of failure to project legal liability.	1			
The state chooses to require septic system inspection	1			
They must be willing to assume liability for loss of sale, etc., is a buyer backs out.	1			
They should be relatively certain the system condition is as stated. If considerably worse than stated, inspection agency may be held responsible.	1			
too many	1			
w/out a quality program for inspections, the potential for suits is probable. Program should include education for homeowner	1			
Could be conflicts of interest or prejudices if government or mortgage lender have interests in certain properties.	1			
...No one can do anything but insure that it works at the time of sale.		1		
Depends on how system is grandfathered in. None if just the requirement of inspection, not repair.		1		

(Question 18) COMMENTS	LEGAL RAMIF	NONE	OTHER	DON'T KNOW
Home inspection required by mortgage lender w/no legal ramification to lender. Inspection is only good as inspector. Do not think much legal ramification for system inspection.		1		
I can think of none, but would expect some changes in local code or state law would be required.		1		
In Conn., lenders have required inspection for some time w/out any legal ramification. Local Health Districts are responsible for certifying new system and repairs to existing system.		1		
none - it is owner of property responsible to inspect & comply w/ local/state laws.		1		
none - too many variables on the life of a septic system		1		
none except State enabling law		1		
None for state or loc governments. Different mortgage lenders shouldn't have separate requirements - could lead to discrimination law suits.		1		
none if it were mandatory		1		
None should exist for the safety of the state, the money of mortgage lender, and to the governments for protecting people & community.		1		
None that I know of		1		
None, if done by qualified persons and limit to function at time of inspection only.		1		
None, if the proper legal code adoptions procedures are followed by county & municipal councils.		1		
None, it depends on amount of water is used in house		1		
none. Burden will be on the element or company doing the insp.		1		
none. I think it's good for government because it would protect the environment. Mortgage lenders should be grateful to know if they are loaning money on property that will need extensive (& expensive) work in the near future.		1		
None. It would be good for buyers & environ.		1		
None. The only legal ramification would fall on the inspector.		1		
see survey. Hopefully, not any. inspection is to protect buyer/seller. If homeowner doesn't maintain system then buyer has right to that knowledge. Inspection would put seller in clear for future misfortunes.		1		
Should have a disclaimer and approved list of bonded licensed contractors.		1		
should not be a problem		1		
The environmental impact should take priority over any legal problems.		1		

(Question 18) COMMENTS	LEGAL RAMIF	NONE	OTHER	DON'T KNOW
There no way a system can be warrant for it depends the use of water & maintenance; also some lands have natural springs; this makes a system never work properly.		1		
There should be no legal ramifications for requiring septic system inspection.		1		
They would be legally protected if they hired a properly trained & certified inspector.		1		
none		25		
"unfairness" - sewer systems don't require inspection at closing, etc.			1	
...Ground water system may be public resource, so individual who contaminates aquifer may be held responsible. What would happen if bank loans \$ on home w/ contaminated drainfield and new buyer gets sick? Banks require Phase I environ on small developments for this reason.			1	
banks should not loan money until septic system is inspected			1	
Believe too much government. DHEC stay out of homeowner business			1	
clean water act			1	
Downside to inspection - it could be 2 people in seller's household & 5 people in buyer's - could be too much for system w/out additional drainfield.			1	
funding of inspectors			1	
just to insure the system is working properly			1	
KEEP GOVERNMENT OUT!!			1	
n/a			1	
One thing that would come up - accessibility to septic system on private prop. Some guys live out in woods & don't allow entry.			1	
Ordinances would be needed to allow enforcement of requirement. Some residents may resist / challenge ordinance placing more requirements on use of property. ...may claim requirements create financial hardship.			1	
Requiring septic system inspection will open doors to ID & repairing system that don't work. It will place burden of proof on the rightful owner to correct problem.			1	
They would have to contend with the grandfather system on existing systems.			1	
To make sure that all system is install as outline correctly, and that the waste is maintain securely as design			1	
Too many requirements exist now			1	
use certified inspectors only			1	

(Question 18) COMMENTS	LEGAL RAMIF	NONE	OTHER	DON'T KNOW
Users may cause problems w/ system that an inspection will not detect or cannot anticipate the frequency of occurrence.			1	
When tank system is inspection by seller, who is responsible for repairs?			1	
It should be part of closing requirements such as a termite letter or heating and air.			1	
Let local governments control like most codes.			1	
No one can guarantee an installed septic system unless they have recently pumped it out.			1	
Conflicting and expanded regs would change forms. LLR would again be a "license author" w/out expertise to handle complaints. City water vs wells should have different regs.			1	
an inspection is not going to be 100% perfect			1	
As long as the inspection only certifies current operations there will be very little fall out.			1	
don't know				4
I am not an attorney - so cannot comment.				1
never thought about it				1
do not want to speculate				1
don't care to speculate.				1
don't know but it should be positive				1
Don't know!! In our litigation minded society there is always somebody trying to sue.				1
don't know, not an attorney-				1
no opinion - not a legal expert.				1
not an attorney				1
not qualified to answer				1
undetermined-too many issues				1
TOTALS	36	52	25	15

APPENDIX E.

RESPONSES TO QUESTION 12 OF SURVEY

RESPONSES TO QUESTION 12 OF SURVEY

Are you aware of geographic area that are experiencing or have experienced septic system malfunctions or problems within the last 5 years? If so, where?

AREAS WITH PROBLEMS WITHIN LAST 5 YEARS
280 Corridor (Shell Point & Mill Pond)
all over Beaufort Co.
all over coastal SC, Snowden, Summerville, Porchers Bluff, Isle Of Palms
areas not meeting today's standards
Beaufort Co.
Beaufort Co.
Berkeley & Dorchester Counties
Brighton Beach, Mink Point
Broad Creek Hilton Head
Cedar Branch
coastal SC
county rural areas and lowlands
every rural area
everywhere
Folly Beach
Folly Beach
Folly Beach & at least 5 other towns
Fripp Island & other islands
Georgetown Co. - NE area- Choppee & Planterville Comm.
Hardeeville has low areas & clay
Hilton Head Island
Hollywood area
in every area of Hilton Head Island
in my area around my house 4 have failed in last 3 yrs.
Isle of Palms
Isle of Palms
Isle of Palms
Jedburg
low areas near the water table
low areas that should not have been permitted
low areas with high water tables
low flood plain coastal
lower Berkeley Co.
Macedonia community, Honey Hill/Shulerville community
McClellanville (some lots)
Mink Point
Mink Point

AREAS WITH PROBLEMS WITHIN LAST 5 YEARS
Mink Point - Beaufort
Mink Point, Beaufort.
Mink Point, Fripp Island
most coastal islands
numerous coastal neighborhoods
Pinewood subdivision, Royal Pines, Polk Village, Rosieda area
Pinopolis, Cedar Island
Ridgeland, Hwy 13
Ridgeville, Knightsville, Jedburg, etc. Dorchester Co.
Royal Pines subdivision
Russell Creek Rd, Edisto Island
Sheldon Township & many other areas in Beaufort Co.
Spanish Wells, Hilton Head
Stone Martin Dr - Mink Pt area; Laurens, East, King Streets; during spring tides
the "Low Country" in SC
Town of Edisto Beach
Wagon Branch, Jasper Co (portion)

APPENDIX F.

RESPONSES TO QUESTION 29 OF SURVEY

RESPONSES TO QUESTION 29 OF SURVEY

(Question 29) ADDITIONAL COMMENTS
<p>Ref. to questions 10 & 11. I feel that inspections of existing homes not being sold is too much government control or involvement. A lot of systems were installed before regulations; sometimes it's not possible to bring systems up to standards of today; your forced to do the best you can with what's available. Questions 14 & 16. These two should go together, inspection should be required at this time, selling or closing. This would be a good time to inform or teach new owner how system functions & preventative maintenance. Being in the plumbing and septic business, we see new owners with problems regularly w/no idea of location or function of system. Some mortgage companies require inspections, but with no standards it's not always of any value. We have been told to leave property upon finding failing systems so they can call someone else, so I feel training & testing is very important with state regulation.</p>
<p>I have seen many septic systems not working around Beaufort County and most people are willing to repair them when they quit working. DHEC already has the authority to require the home owners to repair system. So I don't see the need for other inspections if people don't want it done. Be it county, state or private inspectors, none of the three work for free and it would be another cost to the property owner. I do feel that if a home buyer has to pay for a septic system inspection or house inspection the inspector should have working knowledge of septic system w/ some schooling on the subject to keep a consistent guideline on what to look for to make sure all the right things are checked.</p>
<p>I believe that a standard protocol for septic inspections should be developed so that functional flow & load on system could be evaluated as a first step. If the system fails load test, then a more intrusive inspection may be required.</p>
<p>Septic systems like everything else is becoming more expensive. An inspection would allow buyer knowledge of system before closing. Septic systems have been an excellent working source for households in past & present - yes drainfields are expensive but doesn't equal costs that water authorities are charging for tap in fees. Homeowners should have the right to decide between septic system or city sewer.</p>
<p>Septic tanks are a problem in SC. As a utility manager, I would be receptive to managing an onsite waste disposal utility. However, there must be a law requiring it first. As Chair of Water Utility Council, I would be interested in pursuing legislative/regulations requiring the inspection/pumping of septic tanks by trained professionals.</p>
<p>I personally don't see need to require people to have their septic system inspected. This is more bureaucratic requirement w/no proven reason, need. What are you going to do with all the waste and contents of septic tank if you force people to pump out every year or two? Will you enjoy shutting down tanks that don't meet the high standards that you will no doubt set? Since more and more land doesn't meet minimum standards for a perc test and it is getting harder to create a sewage treatment plant what will we do with the development that wants to happen? We will all be painted into a tight little box that will explode.</p>
<p>I started my inspection business in New England where septic systems were quite common as opposed to Hilton Head where there are few. Whenever I encountered a septic system either then or now, I recommended that it be inspected by a 'reputable' company specializing in the installation or repair. It is not always easy to know whether a home is connected to sewer or septic. There should be legal requirement to "flag" all septic installations. A corollary to septic testing should be the mandatory testing of all private wells at time of property transfer.</p>
<p>My experience indicates that residents w/septic systems are not knowledgeable of care & maintenance. But they are motivated to have a properly operating system. Our biggest factor in malfunctioning system is standing surface water over septic systems. I think the solution is an effective education program for owners & emphasis on keeping standing water off systems.</p>
<p>I also feel that restaurant grease traps are never pumped/cleaned enough. We have been on calls for floor drains backed up due to grease traps neglected and not pumped out on time causing major unsanitary conditions w/in the restaurant. When this happens & we feel it is due to neglect, we should report to DHEC & a DHEC representative will inspect.</p>

(Question 29) ADDITIONAL COMMENTS
Specialized training is the only way to ensure uniformity in inspections through out the state! I think no one should be exempted from training; I think only licensed septic system personnel should qualify for training and certification. That way they already have a good knowledge of the workings of a system.
All home inspectors should be interested in training.
An inspection program for existing septic tank is long overdue. It is my opinion that once properly trained inspectors are available, most new home buyers of existing dwellings will require septic systems be inspected before closing on loans. There is the potential problem that if an inspector doesn't detect defects or malfunctions in the system & it is later discovered this could pose a legal problem for the local or state governing body.
Approx. 75% of the septic tanks in the Town of Aynor were not functioning properly. We have installed a sewer system. Our town is much cleaner and safer.
My concern immediately is the development of coastal property and home sites adjacent to wetlands, river/streams. I am not confident our septic site setbacks are sufficient to prevent pollution of our waters. Septic system should at least be inspected when a home is sold, but a periodic (5-7 yrs) inspection would be better. Even preferable, Beaufort County should expand/build sewer systems, and begin to service more sensitive areas: Lady's Island, St Helena & northern communities on the wetlands.
The current method of approving septic permits will w/in the next few years result in an enormous amount of septic failures in Charleston area. Therefore any home buyer and lender should require an up to date inspection for a functional system.
I am currently a licensed home inspector. I installed septic system for 20 years in Maryland. I would be very interested in this program; I encourage and see the need for septic inspection.
I don't feel there is a need to require inspections of existing septic systems . Systems that were approved by DHEC, installed to specifications shouldn't malfunction. It should be the responsibility of the home owner to maintain their system. If their system fails, it should be their responsibility to repair that system. If the homeowner feels there is a need for inspection, it should be their responsibility.
Don't understand why you want to inspection system that is working. There is no requirement to inspect these systems. Are you going to require inspection of plumbing, mechanical, framing, tile, kitchen appliances?
Grand Strand is served by GSWSA and I believe the number of septic system in use are small. No septic system in my manufactured home park.
I am also senior bldg inspection for Georgetown Co. I see all types of problems w/ septic systems; I think we need some type of program.
I believe realtors will resist more inspections!
I hope DHEC will keep the hell out of people's septic tank business. If they are looking for something to do, go fishing.
I think it would be beneficial for the consumer to be able to call a trained person. Otherwise, they may be at the mercy of the repair person, who may not know as much as presumed by the consumer.
I would like to be considered in this survey. I think we need extra inspector to check on these systems. I would like to attend this training and test program.
I would like to see inspections in the future. I think it is the wise thing to do. Re: #15, private enterprise. Per question 15: If septic system inspections were required, it should be primarily local government, but w/ state overseeing. Pumpers should have a "check list" for reporting findings, conditions of tanks before & after maintenance.
To me if the septic system works leave it alone. When a problem arises DHEC comes to insp. What's so hard about that? If I could get trained & get paid to do it, let me at it. Has anyone been concerned with the amount of money a homeowner must pay just to live now a days. If it works, leave it alone. If not fix it. Simple isn't it.
In 2000, I have worked on or inspected 72 homes on septic systems and have found 90% of them operating improperly, and the home owner having taken the steps to drain their system to an open ditch or pit in about 50% of the cases. I have reported such to local agencies on the most drastic cases just to be told that there are no maintenance laws or inspection requirements. Such a service is greatly needed for the public protection and I will help in any way I can.

(Question 29) ADDITIONAL COMMENTS
In retrospect, the crux lies on questions 10 & 14. All the other questions seem to carry an underlying slant to move the participants toward a conclusion that testing of existing septic systems is needed. I cannot in good conscience say that is my belief.
Re question 18: Inspection of septic generally will or can tell only that system is working properly. Overall condition of tanks, drainfield, etc., cannot be determined by inspection.
Inspectors should be licensed thru LLR. All property owners w/in the jurisdiction of a utility should be required by DHEC to install and hook up to sewer systems. Especially in all the coastal areas where the soil is sandy and the groundwater table is high. DHEC needs to mandate that all homeowners with septic tank where sewer is available, to hook up to the sewer w/in a given time frame.
It appears that this survey is slanted towards a program to require inspections by the state. You're probably well advised to leave this to the counties.
Let the organization notify us (real estate).
Needs to be coordinated w/ Beaufort Co. SAMP
I am not for adding another layer of government, however I do believe this can become serious problem in certain areas if not maintained. I indicated everyone should be trained. This may not be correct because I do not know knowledge of engineers, installers, etc. Big picture is some qualifications is needed.
Not home inspection work. Companies that install and/or clean septic system should inspect systems. If an inspection law is passed these companies should commit to expand to supply service. Risk - conflict of interest.
I do not feel it is the place of government to monitor how people upkeep their private property. When buying property it is the consumers responsibility to research and/or inspect what they are buying. The only reason for local government to get involved is when raw sewage is standing above ground and causing health risks.
Per #10, time limit, maybe if system is over 3 yrs old?
Please forward survey to building official & planning director for Georgetown Co.
Re #10, inspect upon complaint.
Re question 15, inspections should be required by county government.
Re question 11, repairs should have to meet current specifications where practical.
Re: #11 Original installation standards may be out of date; should be the most up to date standards!
Re: #14 Between buyer & seller & courts!!
Re:#17: inspected when dry, malfunctioned in wet weather. The questionnaire is still biased toward an inspection system.
I have recommend that the Planning Commission draft an ordinance addressing water quality issues for the town council to consider for adoption. In this recommendation, I addressed a needed town requirement for property owners to maintain their septic systems. Information you could provide the town relative to the effects on the ground and estuary water quality, health, etc. that poorly maintained septic system cause or contribute would be appreciated.
See #14. If this was enforced in the counties, tanks would be pumped. We would have less malfunctioning. Then if there was a malfunction, an inspection of the repairs would correct the problem.
It is a known fact that Berkeley County Water and Sanitation Authority is in the business to provide safe, reliable water and sewer services to the rural public of Berkeley County. However, the demand for public sewer service is growing at an alarming rate. This is partly due to the tight soil types in the low country and partly due to the fact that a large number of Berkeley County's rural individual septic systems are old, improperly constructed and over used. DHEC's discussion about training non-DHEC inspectors for existing septic systems is a positive move in the right direction.

(Question 29) ADDITIONAL COMMENTS
(See letter for comments on Maryland program.) ...Most septic certifications are nearly meaningless; pumping the tank and then flushing everything into it only demonstrates that the lines are intact and go into tank. Very few companies (and no home inspectors) are prepared to do a full field test (pump tank, flush, fill, identify field location and dig test holes in field). This is an expensive proposition. In 20 years in this business, I have never known any home owner to do anything more than have his tank pumped regularly unless and until he or she had sewage on the lawn or toilets backing up (or the top fall in). This last comment is true even on the worst properties (like the one where my buyer following me around the yard fell thru the wooden top and into the tank; or the system I found using the buried body of a 1930's Dodge as the tank – and the leak covered hillside as the drainfield (on a house selling for \$350,000). Good luck!
Septic systems are needed in our area. However, they are only inspection by DHEC when newly installed. But they are not inspected all the time when repaired. There are no known standards used in repair or maintenance. I hope this survey will result in the state starting a program w/ standards.
The inspectors should not be in the business of pumping/repairing. I think the public would feel that they would be taken advantage of if the inspector did pumping/repair.
This whole thing sounds like more government interference in private lives, invented by a "training" company.
This governmental jurisdiction has no intention of ever supporting local governments to require and/or inspect any septic system. This is clearly the responsibility of the state – specifically DHEC. Definitely not private market's business - mortgage companies require too many hoops. State, because already regulate new systems & upgrades are only legally equipped to equitably apply any regulation & enforcement - contamination can cross jurisdictional lines.
We do not need another inspection on homes in this area. It will end up like the bogus termite inspections that we have to get. The termite inspectors do not warrant what they say and have so many loop holes in their C-L-100's that they are useless. The same thing will happen in this field as well. This will cost the seller's and buyers more money. And I wonder if DHEC will benefit from this move also. Hmm Hmm.
We have city water/sewer at our community, but I'm President of Grand Strand Chapter of the Manufactured Housing Institute of SC and on state Board of Directors. Many of the people in the industry do use septic systems. I am very interested in that area.
While we feel inspection of existing septic systems is important, we cannot commit staff to task. Septic system approval currently are a state requirement & inspection of existing systems should be the same.